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ABSTRACT

The first section of this final report is an introduction that is on video tape and available only through the author. The second section, which is written, concerns large group instruction. It contains information on the lecture and on an instructional management strategy for individualized learning. Small group instruction is explored in section three. Some of the topics discussed are what is small group discussion and why it is desirable, how small groups should be organized, and how small discussion groups can function more effectively. Section four pertains to independent study. The topics discussed in this section include what independent study is all about, teacher planning for independent study, and materials for independent study. The focus in section five is on the development and writing of instructional objectives. Section six deals with the utilization of teaching strategies. Included in this section is information on the UNIPAC format, how children learn to think, key concepts of individualization, machine scheduling, and determining individual needs. Section seven discusses the development of learning packages and includes sample formats. Section eight concerns creativity related to thinking skills. Finally, section nine deals with evaluation instruments. Included in this section is information on diagnosing and assessing the teaching act and performance assessment rating. (RC)

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IN-SERVICE DEVELOPMENT THROUGH THE USE OF VIDEO-TAPES AND LEARNING PACKAGES

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SECTION I

SECTION II

THE LECTURE --

Are We Reviving Discredited Teaching Methods?

Mr. Pulliam warns that our eagerness for economical instruction is forcing us back upon the lecture (as in television and team teaching), which has always taught the teacher much more effectively than the learner.

By Lloyd Pulliam

The growing flood of students and its accompanying competition for the education dollar has led educators to search for new ways to reduce educational costs. Because it is one of the few methods that can be used with large classes, increasing reliance has been placed upon the lecture. It has always been the major teaching method in our colleges and universities, but during the past few years its use has been extended into all levels of the educational system through team teaching and educational television. If fiscal success is not to become educational failure, it is imperative that educators carefully evaluate student learnings from the lecture.

To gain some perspective on its current usage, let us turn to the historical development of the lecture system. It is useful to remember that the lecture system evolved largely because of the scarcity of hand-copied books in medieval universities, prior to Gutenburg's invention of moveable type in the fifteenth century. The few books in existence were usually in possession of the masters and doctors who taught in those institutions. It was natural under such conditions for the teacher who controlled the source of knowledge to fall into the habit of lecturing to his students. These lectures often consisted of nothing more than the doctor reading from his book while his students took notes. The strength of this pattern of academic culture is reflected in the fact that the Latin word legere (past participle, lectus), meaning "to read," became synonymous with teaching.

As books gradually became available, the lecture was expanded to include comments on authors being studied, and a summary of their points of view. At a later date, the faculty at the University of Halle used the lecture for the presentation of a changing field of knowledge, rather than just an interpretation of accepted texts. This concept of the lecture as a teaching method became part of the culture of American higher education as it came more and more under the influence of German universities.

What is to be learned from this historical experience? While in some fields, especially the natural sciences, books become obsolete almost before they are published, the use of the lecture today may hardly be justified because of a scarcity of books. Perhaps a more significant point is that, through the teacher-centered use of the lecture, the medieval university relegated the student to a secondary position. This cultural pattern was further reinforced by German universities in their primary emphasis on research and the advancement of knowledge, and it became a major pattern in American universities as the German experience became the model for American graduate education.

While failure to evaluate the teaching-learning process is a weakness of our entire educational system, there are two studies which lend valuable insights for our evaluation of the lecture.

One group of studies is reported by Ralph G. Nichols and Leonard A. Stevens in their book Are You Listening? At the University of Minnesota, these researchers tested thousands of college students and members of adult educational classes on their ability to understand and remember what they heard in short lectures by university faculty.

THE LECTURE -- (continued)

As a result of these tests, it was concluded that "immediately after the average person has listened to someone talk, he remembers only about half of what he heard--no matter how carefully he thought he had listened." Even more significant was the finding on a retest after a two-month time lapse that "the average listener will remember only about 25 percent of what was said." Even if learning is defined simply as the ability to comprehend and recall information, this study indicates that the lecture, as normally used, is not very effective as a learning method.

It is not content that is usually remembered from a lecture, but an "impression" of the speaker's personality, his speaking delivery, and the attitudes he voices about concerns important to the listener. If there is no clarifying interaction between listener and lecturer, the attitudes conveyed may be distorted from those actually intended. If the lecture does not move students to further activity, very little will be remembered. Let teachers who doubt this, if they feel courageous and secure, conduct their own experiments, using surprise tests to evaluate retention of subject matter from the lecture.

'Lecture Doesn't Change Behavior' -- Lewin

A second group of studies bearing on the use of the lecture were conducted during World War II under the late Kurt Lewin, a prominent social psychologist. The results of these studies have been widely reported in a number of articles, one of which is entitled "Group Decision and Social Change." In these studies the lecturer was compared with group discussion leading to group decision as means of inducing housewives to use organ meats instead of commonly used cuts, and to increase consumption of both fresh and evaporated milk.

Every effort was made to give attractive and effective lectures. The nutritive values of these foods were stressed, as well as their low cost. The lecturer told of her experience in using these foods with her own family, and handed out recipes. Charts and other visual aids were used. Even the patriotism of the housewives was called into play with the suggestion that greater use of these foods would aid the war effort. The lectures would compare favorably with those given today via educational television.

The results indicated that only 3 percent of the women who attended the lectures served one of the meats they had never served before. In the groups where group discussio led to group decision, 32 percent of the housewives served the new meats. Results increasing the use of milk were similar; 15 percent of the housewives who heard a lecture increased family usage, while almost 45 percent of the housewives who heard a lecture made the change after being involved in group discussion and decision. If learning is defined as behavioral change, the lecture, in these studies, was relatively ineffective.

What is the difficulty with the lecture, and why does it appear to be directly responsible for so little learning? The most obvious limitation of the lecture, as it is commonly used, related to the fact that it is teacher-centered rather than learner-centered. Whether the situation be the college and university classroom, television or team teaching, the choice of the lecture does not rest primarily on the needs of students but is determined by the cultural situation of the teacher, the character of the medium, or the organization of the class. In these situations the lecture is largely a teaching method, in its focus, orientation, and lack of concern, in the deepest educational sense, with what is happening to the learner. The lecturer is occupied with the question of "what shall I say?" rather than with "what kinds of experience can I lead students into that will increase their positive learnings?" In order to prepare his lecture notes, the teacher does much reading and studying, and therefore acquires most of the learning.

The student does not learn desired knowledge and skills just from listening, being told and exhorted. The student learns only as he makes knowledge, skills, and attitudes of his own, in such a manner that he gains meaning from them for his own life, and is able to use them in a variety of contexts. His learning is accomplished through self-discovery and personal experience, in a socio-cultural context, where his discoveries and experiences are interpreted and evaluated, accepted or rejected, learned or not learned. This is an active process on the part of the learner, not something his teachers do for him. Emerson seems to have been subjectively aware of some of these human processes when he said, in his address on "The American Scholar," "Only so much do I know, as I have lived."

Individual Learns Through Interaction

Evidence from the behavioral sciences indicates that the individual learns as he interacts with other human beings. His teachers, many of whom are not conscious of their teaching role, may be his parents, siblings, peers, professional people, and leaders in the community. Even the experience which the individual acquires alone is ultimately social in the sense that it is evaluated against his background of socially acquired experience. Thoreau, for example, discovered that he could leave society behind physicall by isolating himself at Walden Pond, but his socio-cultural experience went with him. It was this background which he used, because he had no other, to appraise his life among nature.

Since the individual learns through social interaction, the lack of such interaction in the lecture situation also contributes to its ineffectiveness. The lecture places the student in an isolated, often confusing and disorganized socio-cultural situation where the learning process has little chance to operate in a positive manner. Lewin points out that while the individual may, physically, be part of a group listening to a lecture, he is in a "psychologically isolated situation with himself and his own ideas." He has no chance to test ideas as he interacts with members of the group, nor does the teacher who is lecturing become aware of misconceptions and prejudices which he might then try to correct.

Moreover, all experience does not result in positive learning conductive to normal development of the individual as a functioning member of society. The increase in number of delinquents indicates that some individuals acquire negative learnings harmful to themselves and to society.

Learning May Be Miseducative

Learning experience may also be negative and miseducative in the sense that it is incomplete. Whitehead has defined education as "the art of the utilization of knowledge." He explains that "the applications are part of the knowledge, for the very meaning of the things known is wrapped up in their relationships beyond themselves. Thus, unapplied knowledge is knowledge shorn of its meaning." It is evident, from Whitehead's explanation that the mere acquisition of knowledge is only part of the learning process. The learner may, for example, acquire knowledge about biology, literature, or any other field, without any knowledge or understanding of its application. This is the character, unfortunate of much that is called learning in the American educational system. The student acquires knowledge about a subject long enough to pass a test and get a desirable course grade, the promptly forgets it.

Most lectures are confined to giving information, without its accompanying applicatio Where this is the case the lecture is an incomplete learning experience which leads to verbalism rather than meaningful learning. Moreover, the inflexibility of the lecture limits its effectiveness when it is used with a class that has a wide range of interests and abilities. If the lecture is aimed at the median ability group, students of low ability may not understand what is said, while those of high ability may become bored because they are not challenged. While the lecturer is easily aware of the highly interested students who are following every word, and the ones who are dozing, there is a large group between these two extremes whose response he is unable to evaluate until he reads their examination papers.

It is common practice for the lecture system to be organized around a 'master teacher' whose major task is to give lectures to large groups. In colleges and universities, quizzes and discussions are often organized in small groups under the direction of student assistants, or, at the high school level, under the guidance of other classroom teachers. With this type of educational organization, there is no interaction between lecturer and students to clarify subject matter and attitudes or give the lecturer the feedback of student response which he needs to evaluate the effectiveness of his lectures. Most of the student learning in these situations occurs in the smaller groups, under the guidance of teachers who are usually less competent than the lecturer. For a variety of reasons, these teachers may not be able to interpret the lecturer's remarks satisfactorily. Where this is the case, it is the entering point for student confusion and negative learnings.

One of the arguments most often used in favor of lecturing to large classes, especially through team teaching or educational television, is that in this way influence of master teachers may be extended to a greater number of students. Recent communications research by sociologists, however, indicates that the success or failure of a master teacher lecturing to a large group (defining success as maximum positive student learning) is largely determined by the personal influence of students' primary-group leaders, who may either reinforce or negate the master teacher's efforts. If this be true, in those cases where the master teacher makes no effort to work effectively with student primary-group leaders, the influence of the master teacher may actually be diminished rather than extended.

PREVIOUS discussion has attempted to delineate the reasons why the lecture, as commonly used, is so often ineffective. But it may be a valuable part of the learning process if it is used properly. The effective use of the lecture relates to the self-education of the student. It begins with a student-centered orientation and emphasis on the part of the teacher. It will derive its value largely from what happens to the student after the lecture is over. If it does not stimulate a student into activity, it will largely fail as a learning method. This kind of outcome does not usually follow unless it is structured into the lecture itself.

Lectures may be designed to inspire new thoughts and action, to lead directly into new experience such as readings, a laboratory experiment to test ideas, field work to lend concreteness to verbalized theory, a thought-provoking and testing discussion, and so on. In the majority of cases, the lecturer should ask for student activity to follow his remarks, suggesting specific reading references and other work that will support, clarify, and make application of the ideas discussed in the lecture.

THE LECTURE -- (continued)

In addition to being designed for action by the student, the lecture is most effective when used in conjunction with other methods and is confined to a group of not more than thirty students. A class of this size enables the lecturer to shift to other methods with relative ease, using discussion, audio-visual aids, demonstrations, and other methods to clarify subject matter and attitudes that may otherwise be distorted if the lecture is used alone. Supplementing the lecture with other methods also gives it the flexibility needed to work effectively with the wide range of ability and interests found in most classes.

It is realized that lack of funds in some educational institutions will not permit any choice other than the organization of some large classes. However, if the mass education is not carefully organized to obtain the maximum learning possible, its cost will be largely wasted. Since most of the learning in these situations will not come directly from the television or large class lectures but from student activities individually and in the smaller groups, the major focus should be on the latter. To support this approach, it is useful to conceive of the efforts of the small-group teachers and student primary-group leaders as an extension of the work of the master teacher.

If educational experience is organized in this way, the major role of the master teacher, instead of being largely focused on the presentation of lectures, would be that of the coordinator of a staff of associate teachers, the demonstration of effective teaching practices, and the suggestion of learning activities and resources. This does not eliminate the master teacher's lectures, but rather changes the emphasis of his role to stimulate, support, coordinate, and provide leadership for the activities of the smaller groups. If the experience of large classes is not organized and integrated in this way, it cannot be expected that there will be the continuity of teaching and the understanding and effort on the part of the student that results in maximum positive learning.

Mr. Pulliam, formerly chairman of the Department of Education at Knox College, is now engaged in research on learning theory at the University of Oregon, Eugene -- (1963)

An Instructional Management Strategy for Individualized Learning

A frequent goal of the administrator is to integrate the essential components of instruction - the teacher, the learner, and that which is to be learned. The problem of integrating these components for the purpose of individualizing instruction is the central concern of this paper.

An instructional management strategy developed at Valley High School, Las Vegas, Nevada, is potentially effective for any school whose staff is attempting to individualize instruction, regardless of the type of schedule being used. To be genuinely effective in the school for which it was designed, however, the strategy was developed within the context of the four phases of instruction which have been advocated by innovators such as Bush, Allen, and Trump. These phases include large-group instruction, small-group instruction, laboratory instruction, and independent study.

Educators should cease to be concerned primarily with the technical problems of team teaching and flexible scheduling. Rather, they should get to the heart of the matter - the opportunities to individualize instruction _provided by_ these innovations. The reader may or may not feel that the technical problems of team teaching and flexible scheduling have been solved; yet progress has certainly been made toward their solution. Agreement can be reached, however, that the problems of individualizing instruction have _not_ been solved.

One key to providing for individualized instruction is the preparation of individualized learning units or packages. Such learning packages are the major elements of the instructional management strategy proposed here, and will be discussed following presentation of the strategy.

Assumptions

If a strategy for individualizing instruction is to be effective, it should begin with the currently existing program as perceived by teachers and pupils. In devising the strategy used at Valley High School, several assumptions were made concerning the perceptions of teachers and pupils, and concerning the schedule.

The first assumption, that _the pupil's responsibility is to learn and the teacher's responsibility is to make available to the pupil that which is to be learned_, places responsibility for the teaching-learning process where it belongs. The teacher does not cover course, but rather uncovers it; he does not need to cover - or talk about - everything that is to be learned by the pupil.

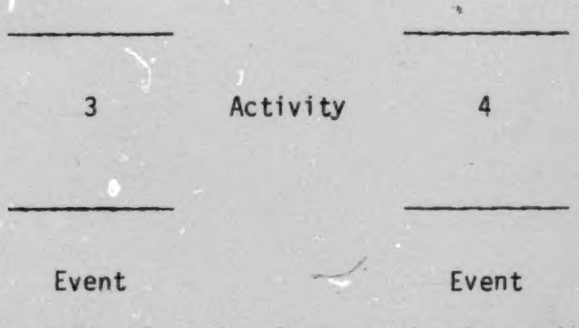
A second assumption concerns the individualtiy of the pupil. The subject matter of a course must be appropriate to the learner with reference to 1) the pace of instruction, 2) the level of difficulty of the instructional material, 3) the relevance of the instructional material to reality as perceived by the pupil, 4) the pupil's level of interest, and 5) the individual learning style of the pupil.

Both the common and the individualized experiences of the pupil result from a third assumption which is related to the schedule: The size of a group, the composition of a group, and the time allotted to a group should be appropriate to the purposes of the group. The common experiences which every pupil in a given course should have are primarily in a function of large-group instruction. Pupil-centered discussion of large-group presentations may occur in scheduled small-group instruction. Individualized, self-paced, quantity- and quality-monitored learning (that is, the use of learning packages with built-in self-correcting mechanisms) may occur in the laboratory phase of the course. In addition, the laboratory phase should include opportunities for student interaction and should provide directly for the independent study phase of the individualized instructional program.

A fourth assumption of the instructional management strategy is that before truly individualized instruction can become a reality, learning packages are needed which will provide for self-paced rather than group-paced instruction.

The Strategy

The instructional management stragegy is based on, but does not adhere strictly to , the principles of Program Evaluation and Review Techniques (PERT). In a PERT network diagram, an activity is a time-consuming element of a project which is represented to a network as a line between two events.



An event is a specific, definable accomplishment in the project plan, which is recognizable as a particular point in time when activities start and/or finish. An activity cannot be started until the event preceding it has been accomplished. A succeeding event cannot be accomplished until all activities preceding it are complete.

The strategy is presented as a network diagram in Figure 1, p. 262. The network is designed to show a sequence in which the pupil will attain an adequate background so that he is able to perceive problems and ask questions. The result of his questioning will be internal generation of a problematic confrontation. Through study and research the pupil will achieve resolution of the problem which he chose for investigation. Thus the sequence in the network is from achievement of background to problem confrontation to problem resolution.

> Change appears in all facets of our society. To facilitate effective and efficient educational change it is imperative that the leaders in our schools assist their teaching staffs
> 1) to perceive accurately the direction of the change, and
> 2) to conceptualize a means for obtaining this change.
>
> Mr. Kapfer has developed an instructional management strategy to assist the teachers at Valley High School in doing these two things. The strategy coordinates the direction being taken by the changes at Valley High School with a means of obtaining the change. That is, through the development of learning packages, the strategy assists the teacher in structuring a program that will allow each pupil to learn at the pace and depth best suited to his abilities.
>
> ---James E. Smith, former principal,
> Valley High School
> Las Vegas, Nevada

Recycling, for some pupils and for some instructional objectives, may occur at various stages as indicated by arrows in the network. Thus, although the instructional management strategy may be thought of as a design for concept attainment through discovery or problem solving, it is not restricted to this interpretation. In the discovery interpretation of the strategy, the pupil might not be given a statement of the concept under study; rather, he would discover it for himself. In the presentation interpretation, a statement of the concept may be given to the pupil at the beginning of the learning package. In either case, the activities and events following Event 3 (see Figure 1) represent an inquiry approach. The activities surrounding Events 4 and 5, those involving minor and major quest, give the pupil the opportunity to become a researcher, and in the process of resolving problems the pupil learns information-seeking techniques. When the decision is made to proceed to a sequential learning package, options similar to those just outlined are available to the pupil.

Preparing Learning Package

Learning packages usually include the following eight ingredients for individualizing instruction.

1. Concepts are descriptions which organize the world of objects, events, processes, structures, or qualities into a smaller number of categories.

2. Instructional objectives tell the pupil what he will have to be able to do when he is evaluated, the important conditions under which he will have to perform, and the lower limit or quality of performance expected of him.

3. Multi-dimensional learning materials of varying difficulty are cited from commercial sources, whenever possible, and include a variety of media which require use of as many different senses as possible.

4. Diversified learning activities provide alternative approaches for achieving the instructional objectives, and incluxe such activities as large group and small group instruction, field trips, model building, drama productions, games, laboratory experiments, role playing, pupil-teacher conferences, reflective thinking, and the like.

5. Pre-evaluation is designed to assess the extent to which the pupil has already achieved the instructional objectives as a result of his earlier learning experiences. Pre-evaluation enables the pupil to invest his time wisely in areas in which he is weak.

6. Self-evaluation is designed to assist the pupil in determining his own progress toward achieving the instructional objectives. Self-evaluation, the results of which indicate the pupil's readiness for post-evaluation, occurs after the pupil has used the multi-dimensional learning materials and participated in diversified learning activities.

7. Post-evaluation is designed to assess the extent to which the pupil has achieved the instructional objectives as a result of his learning experiences.

8. Quest includes problem confrontation, delimitation, research, and resolution. Quest is a pupil-initiated and self-directed learning activity.

Integration of the above eight curricular elements in the form of learning packages can serve as an important advancement in providing for self-paced learning through individualized instruction. An experimental course, Human Relations - an Interdisciplinary Study, which is currently under way at Valley High School, is based on the instructional management strategy. One of the learning packages developed for the course is reproduced below in the form in which it is available to students. Only the pre- and post-tests have been omitted here due to space limitations.

LEARNING PACKAGE TOPIC: STEREOTYPING

I. CONCEIT STATEMENT

Stereotyping is a learned behavior which results in loss of individuality for members of a stereotyped group or institution.

II. INSTRUCTIONAL OBJECTIVES

A. From his own experiences, the student will be able to define the term "stereotype" and give at least five examples of stereotyping. He will be able to explain how such thinking restricts his effectiveness in human relationships.

B. Given six general headings and related terms, the student will write the response which he freely associates with each term. By looking at himself or at someone he knows, he then will be able to explain the degree of validity of his free association responses.

1. Physical appearance
    a. red hair
    b. blonde
    c. blue-eyed
    d. fat
    e. tall and dark

2. Geographical location
    a. Southerners
    b. Las Vegas
    c. New Englanders
    d. San Franciscoans
    e. Westerners

3. Occupation
    a. Doctors
    b. Lawyers
    c. Truck Drivers
    d. Musicians
    e. School Teachers

4. Age
    a. teen-agers
    b. over 30
    c. over 65
    d. Old Shep
    e. kindergarten

5. Socioeconomic level
    a. hicks
    b. snobs
    c. happy
    d. unhappy

6. Racial, religious, and ethnic groups
    a. Pollacks
    b. Mormons
    c. Irish

III. LEARNING MATERIALS AND ACTIVITIES*

A. Scan - current news media.

B. View - "Common Falacies About Group Difference." 15-minute 16 mm film. McGraw-Hill.

C. View - "High Wall," 32-minute 16 mm film, McGraw-Hill.

D. View - "None So Blind," color filmstrip with sound, Anti-Defamation League of B'nai B'rith.

E. Read - Robert P. Beilbroner, "Don't Let Stereotypes Warp Your Judgement," Anti-Defamation League of B'nai B'rith (pamphlet).

F. Read - Raymond W. Mack and Troy S. Duster, "Patterns of Minority Relations," Anti-Defamation League of B'nai B'rith (pamphlet).

G. Read - Earl Raab and Seymour Lipset, "Prejudice and Socieyt," Anti-Defamation League of B'nai B'rith (pamphlet).

H. Read - William Van Til, "Prejudiced - How Do People Get That Way?" Anti-Defamation League of B'nai B'rith (pamphlet).

I. Read - Howard J. Ehrlich (ed.), Theory Into Practice, special edition, available from Anti-Defamation League of B'nai B'rith.

J. Read - William Peters, "Why Did They Do It," Good Housekeeping, June, 1962.

K. Read - G. M. Morant, The Significance of Racial Differences. Paris, France: UNESCO, 1958, 47 pp.

L. Read - Arnold Rose, The Roots of Prejudice. Paris, France: UNESCO, 1958, 35 pp.

M. Read - David Westheiner, My Sweet Charlie. Garden City, N.Y.: Doubleday, 1963, 366 pp.

IV . SELF-TEST

A. Define "sterotype" and give at least five examples of stereotyping. Explain how the thinking represented in each of your examples restricts one's effectiveness in human relations.

---

*The studetn selects from the suggested learning materials and activities those which he needs in order to achieve the instructional objectives. He is neither restricted in these suggestions nor expected to use all of them.

B. List your free response to each of the following areas. Teacher, teen-ager, parent, Mexican, truck driver, farmer, fat, red. Are your responses accurate? Explain.

V. SELF-TEST KEY

Answers on the self-test will vary. After checking your performance with the objectives and discussing your answers with other students, if you still are in doubt about acceptability you should discuss the answers with one of your instructors.

VI. QUEST SUGGESTION

Select a common stereotype and describe the process of generalization by which this stereotype might have developed. Can you find any evidence to support or refute your description?

Summary

The instructional management strategy is designed to assist teachers in establishing stepwise procedures for achieving individualized instruction. The important elements in the strategy are learning packages designed for use by individual pupils. Identification of the important concepts and instructional objectives which are to be taught by means of these packages will permit the establishment of hierarchical schemes around which the curriculum may be organized, K-12 and even higher. The packages may take many forms, but a common characteristic of each is the provision for self-pacing. As a result, the pupil is enabled to progress at his own best rate, thus avoiding the familiar difficulties of group-paced instruction.

SECTION III

AN INVESTIGATION
OF
SMALL-GROUP DISCUSSIONS

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INTRODUCTION

In recent years the place of small group discussion in the instructional program of our schools has come under considerable investigation. There are several reasons for this inquiry, as will be explained later in this paper. While the discussions method has been part of the reservior of teaching techniques used by skillful teachers in the past, the present emphasis places small-group discussion in a new framework. Currently, we consider the small discussion group to be characterized by the following:

1. It is a face to face meeting of three to fifteen persons.
2. The small-group meeting is part of the planned total educational experience of the student. As such, small group discussions directly related to other experiences provided in the educational program for the student.
3. The discussion group is student or group centered. While the teacher is part of the group, he does not play the dominant role. The students learn from one another. They relate their own experiences, knowledge and understanding to the topic.
4. The group exists for two primary purposes. First, to provide the students with an opportunity to develop better insight, understanding and concepts of the subject matter under consideration. The small group is used as a laboratory to test ideas, receive reinformcement and to discuss areas for further inquiry. Secondly, the small group exists for the purpose of helping youngsters learn more about their place in a group, how to work with others in solving problems, and how to share their ideas. In short, small-group discussion is both subject and process oriented.

Because of the recent interest in the role of small-group discussion in the educational process and because of the difficulties confronted by teachers using the method, this paper has been developed. The writer has an opportunity to work in a school where small-group discussion was part of the program. He has also had an opportunity to visit schools employing seminar techniques. As a result of the experiences, more questions than answers have come to mind. In this paper, an effort has been made to answer some of the questions which seem to be most pressing to those interested in small-group discussions. In the following pages ther writer attempts, through an investigation of relating literature in the field, to answer the following questions:

1. What is small-group discussion?
2. Why have small-group discussion?
3. How should small-groups be organized?
4. How can the small discussion group function more effectively?

I. WHAT IS SMALL-GROUP DISCUSSION?

John W. Keltner defines group discussion as a method or making democracy work. He states that it is primarily problem-solving by two or more people talking and thinking together in a group where they work face to face with each other. Keltner goes on to list ten factors leading to good discussion:

> "1. Good group discussion is a common experience shared by everyone.
> 2. It is primarily a problem-solving experience.
> 3. It requires that members be informed.
> 4. It requires that we share our information with others.
> 5. It requires an objective attitude by members toward the problem, the information, his colleagues, and himself.
> 6. It requires reflective thinking.
> 7. It requires good leadership.
> 8. It requires good listening.
> 9. It requires good speaking.
> 10. It depends upon individual contributions."[1]

Group discussion as we refer to it in this paper has two major purposes. First, it helps the student to understand and stimulat ideas, concepts and principles. In this regard it is subject oriented. A concept in social studies may be better understood as a result of a student's participation in group discussion. In addition, the seminar may well serve as a launching pad for further inquiry by the student on his own.

The second purpose of group discussion is process oriented. The student learns how to become a part of a group. He learns how to work with others. He learns how to listen. He learns the process whereby problems are solved through group interaction.

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[1] Keltner, John W., Group Discussion Processes
New York: Longmans, Green and Co., 1957 pp. 4-11.

Small-group discussion, as used in this paper, refers to groups of students meeting on a regular basis with three to fifteen people involved. It is also assumed that the small group sessions are part of the total plan of instruction. By this, we mean the seminar group is a fragment of a larger instructional group and is related to the student's independent or individual study as well.

II. WHY HAVE SMALL-GROUP DISCUSSION

It would appear that there are two major reasons for the current emphasis on student participation in small-group discussion. The first of these reasons is to help the student better prepare himself for life in contemporary society. In our present culture, small-group discussions are extremely important. This is an age of communication. It is assumed that much of the problem solving, behavioral and attitude changes necessary to improve our society can better be done through group process than on an individual basis. Secondly, group discussion is an educational experience that aids the student in learning. Let us examine each of these reasons separately.

A. The Place of Discussion in Our Society

Historians are fond of coining phrases designed to capture the essence of the times with which they are dealing. The Age of Reason, the Age of Alchemy, The Atomic Age, The Space Age -- these are but a few examples of their efforts. Soon a historian will probably classify our present day as the Age of Communications, for surely ours is a time when people, perhaps more than ever before in history, are engaging in talk with their fellow man. In this country, discussion among people is a most important part of making decisions, forming policies and developing cooperation. To anyone familiar with modern business and industry, for example, it hardly seems necessary to point out the amazing amounts of time that are spent on meetings.

Is the group discussion method the best way to conduct so many of our affairs? No doubt there is a strong consensus of opinion that the group method is the best. Business men and others, for example, have come to consider the conference the best means for seeing that the managerial work of the world gets carried on. Billions of dollars rest on the assumption that group discussions are in some sense better than individual decisions. Is this, however, a fair assumption? Are groups more effective than the individual in such areas as changing attitudes and behavior or in such fields as problem solving?

The question of the impact of the group on individuals has come into study within the past decade. This is usually referred to as "small group analysis" or "group dynamics" and it has mostly been dominated by social psychologists. Research on the effects of the group in changing individual attitudes and behavior has given rise to three interrelated generalizations: "that the group change is easier to bring about than is change of individuals separately; that its effects are more permanent; and that it is more likely to be accepted if the individual participated in the decision."[1] If the research is valid, then the effect of the group on individual behavior and attitudes is profound. Studies can be found supporting the above generalizations. However, Olmstead points out that it's too early to draw firm conclusions as to why these changes take place. The importance of groups on individual behavior and attitudes cannot be denied and deserves continued attention and research.

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[1] Olmstead, Michael S. The Small Group, New York; Random House, 1959, pp. 69-74.

What do the studies tell us about group problem solving? While research has been limited, the investigators tell us this:

> "In many simple tasks, tasks largely of the puzzle of reasoning variety, groups are superior to individuals. Groups give more correct solutions, they have better learning and recall, they make fewer errors and they detect them more quickly. Thus in cool, impersonal laboratory problems wherein the checking of logical error is important, groups do better than individuals."[1]

B. Discussion as an Aid to Student Learning

It has already been pointed out that the small group aids student learning two ways. First, it helps the pupil to better understand subject matter, concepts, ideas and principles. Secondly, group discussion aids students in personal relations. Perhaps the greatest stir in the investigation of the place of the seminar approach has come as a result of the writings of Dr. Lloyd Trump. Dr. Trump served as the Director of the National Association of Secondary School Principals Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. As a result of the Commission's five-year study, several reports were widely distributed.[2] Subsequently, hundreds of schools throughout the nation have adopted patterns of curriculum organization and instruction outlined in these publications. One of the main ideas presented in these writings was the importance of small discussion groups. Dr. Tramp states the following four purposes of small-group classes:

> "--Provide opportunities for teachers to measure individual student's growth and development and try a variety of teaching techniques which will be suited to the student's needs.

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[1] Olmstead, sp. ut. p. 85

[2] See bibliography entries number 14, 15, 16

> --Offer the thereapy of the group process, whereby students are induced to examine previously held concepts and ideas and to alter rigid, sometimes mistaken, approaches to issues and people. Students will learn, in other words, how to become a better group member.
>
> --Permit all of the students to discover the significance of the subject matter involved and to discuss its potential uses, rather than just to receive it passively and return it in tests, as happens too often in today's classroom.
>
> --Provide students with opportunities to know their teachers, on a personal, individual basis."[1]

Another influential authority in the field of group process is Herbert Thelen. In his recent book, Education and the Human Quest,[2] Dr. Thelen points out the importance of small group work in our schools. Among other things he sees group investigation as a means of motivating students.

> "--there are a lot of things students do not, presently, have a need to know. The unique function of group investigation is to stimulate new needs for education... The heart of the method of group investigation is to arrange things in such a way that the students have the experience of creating a group dedicated to the futherence of inquiry in the appropriate domain of knowledge."[3]

Thelen goes a step further and adds another dimension to learning which he calls reflective action.[4] In this process, students apply what has been learned in all areas of the instructional program into real life action. The point is, as has been stated earlier, the small-group discussion, the activities of the larger group, independent study and perhaps reflective action are all part of a total planned educational design. Certain activities are planned for each of these areas of student experience.

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[1] Trump, J. Loyd, Focus on Change, Guide to Better Schools., Chicago: Rand McNally Co., 1961, pp. 24-5.

[2] Thelen, Herbert A. Education and the Human Quest., New York: Harper Brothers, 1960, p. 224.

[3] Thelen, op. cit. pp. 146-7.

[4] See Thelen, op. cit. Chapter 9, pp. 166-180.

Other authorities have pointed out advantages of small-group discussion. In answering the questions what are the effects of groups on the individual in the school environment, Barlund and Bainman make the point:

> "In educational groups, participation in discussion not only seems to increase the student's interest and learning but also enables him to assimilate the material more throughly."[1]

Research points that small groups also permit the student to better express his own ideas and to hear from others. Carter[2] found that in the small group each individual has sufficient latitudes or space in which to behave and thus the basic abilities and ideas, since the amount of freedom in the situation is not sufficient to accommodate all of the group members.

To summarize our discussion of why we have small-group discussions, the following major points have been presented:

1. We live in an age of communication.
2. Small group procedures are used in our socieyt to help people change attitudes and behavior, solve problems and better understand one another.
3. Small group discussions serve as an aid to students in better understanding subject matter, concepts, principles and ideas.

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[1] Barnlund, Dean C. and Haiman, Franklin S., The Dynamics of Discussion Boston: Houghton Mifflin Co., 1969, p. 7.

[2] Carter, L.F., "The Relations of Categorization and Ratings in Observation of Group Behavior," Human Relations, April 1951, pp. 239-254.

4. Small group discussions serve as an motivational force for students.
5. Small groups discussions help students to learn how to work with one another and how to work as a member of a group.

III. HOW SHOULD SMALL GROUPS BE ORGANIZED

In this section we shall attempt to briefly answer questions regarding the composition of the group, the size of the group and the physical environment needed for good group discussion.

A. How Should Small Groups be Composed

This is a most difficult question to answer because at present we seem to know very little about how to compose groups for instructional purposes. This is unfortunate because according to Thelen, "there is a growing belief that the composition of the group may be at least as important as the method of the teacher in determining the quality of the educational product."[1]

Perhaps we can begin by saying that as we become more skilled in small group discussion techniques, research will develop that will be of assistance to us forming groups for discussion purposes. Until then we should provide for as much flexibility as possible. By this we mean that it should be possible to move persons from group to group as the need become apparent.

There are a few things we do know about the composition of groups that should be mentioned. First, the composition of the group should be appropriate to this purpose. For this reason group membership may change from time to time. Secondly, groups should be able to find common causes readily. Third, there should be a cross section of representaives abilities and knowledge on the part of the students. There may be some exceptions to this, particularly at the extreme levels. This is only an opinion of the writer and cannot be backed up by research. Fourth, and we credit Dr. Thelen for this, "the group should be able to get into temperamental conflicts. The members should react differently to the same reality stimulus; there should be the possibility of clashes."[1]

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[1] Thelen, op. cit. p. 131

Finally, groups should be composed in such a manner as to provide combinations of students whose psyche needs help rather than hinder possibilities of learning. In some cases this may mean the separation of friends while in other cases it may mean putting them together.

B. What should be the Size of the Small Group

A considerable amount of research has taken place concerning the optimum size of problem solving groups. We do not intend to devote much discussion to these studies since most of the research points out that discussion groups seem to function best when the number ranges between three and sixteen. These limits have no magic about them and of course time, place and purpose have a great deal to do with the number of people that can work together effectively. Both Thelen and Trump agree that in most cases the school discussion group should not exceed fifteen students.

Elizabeth Belford, co-chairman of the humanities division at Ridgewood High School, a school that utilizes small-group discussion in most of its courses, believes that when the size of the group becomes less than eight the group loses its effectiveness. The writer has worked with teachers who had discussion groups ranging in size from six to seventeen pupils. The consensus of opinion of these teachers was that twelve students was the ideal number.

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[1] Thelen, op. cit. p. 134

To summarize, we can say that group size is largely dependent on the purpose of the group and on teacher preference. In most cases the group will not be fewer than eight students or more than fifteen.

C. What Considerations should be Made for the Physical Environment for Small-Group Discussions?

Most of us are familiar with the physical arrangements needed for effective discussion. With the new emphasis on small classes, schools are being constructed which provide areas specifically designed for this type of activity.[1] Older schools being remodeled to meet changing needs of the curriculum are dividing existing classrooms with folding partitions. When constructing seminar rooms, Trump suggests that they can be of a variety of shapes -- rectangular, square, five or six sided, and, usually measure 200 to 250 square feet.[2] Furniture for these discussion rooms normally consists of chairs and tables arranged in a circle. Recently, school equipment companies have begun to manufacture chair-desks designed to groups for discus~~sion~~ sessions.

In seating students for discussion, it is important to arrange the room in such a way that all members of the group can have eye contact with one another, are close enough to hear all that is said and "feel" as if they are part of the group. Keltner outlines the following forms of seating that have been used in discussion groups:

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[1] For comprehensive discussion of some of these schools see "Profile of Significan Schools" Series of Educational Facilities Laboratories, 477 Madison Ave., New York, 22, N.Y.

[2] Trump, op. cit., p. 39.

"1. The Circle and semicircle are the most desirable.

2. The square is almost equally desirable.

3. The rectangle is less desirable because of the tendency to line people up on either side of the table and create long distance from head to foot.

4. The T formation is a popular form in many business houses, but it often creates a kind of status of power centered at the middle of the T. At the same time, it made it difficult for the man of the outside corner of the T to see and hear those cornerwise across the table.

5. The triangle is usually a very good arrangement."[1]

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[1] Neltner, op. cit., p. 123

IV. HOW CAN THE SMALL DISCUSSION GROUP FUNCTION MORE EFFECTIVELY

This is the question most frequently asked by educators interested in small-group discussion. Teachers employing the seminar approach have discovered extreme difficulties in conducting meaningful discussions. The following quote is typical of the reaction of many people studying the staff utilization proposals:

> "Where the program falls down is in the seminar. Hardly a handful of teachers really know how to use them properly. Most teachers approach seminars as classes with fewer pupils. They work with them exactly the same way they would work with classes of 25 or 30 students."[1]

Dr. Trump points out in the report of the Staff Utilization Commission that teachers had difficulty with small groups. For example, he notes observations of teachers who sometimes remained standing by a portable blackboard giving directions, asking questions, and writing answers during much of the period. As many as one-half of the students in several observed instances never contributed an idea during the entire period even though there were only ten to fifteen of them in the group. Most of the time was spent by the teacher in asking questions each answered by one student without discussion among pupils.[2]

How can we help teachers overcome these difficulties? First, we must look at small group discussion in a different light than most of us have in the past. As has already been suggested, the small group has an identity all its own --- it has a special purpose. Seminars are designed to allow students to do things they cannot do in an ordinary classroom.

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1. "Why Seminars Don't Work," School Management, June, 1962, p. 552.

2. Trump, op, cit., p. 25.

Secondly, students need assistance in understanding the purpose of small group discussion and his place in it. The purposes outlined in section two of this paper should be known by students as well as teachers.

Third, students need assistance in identifying themselves to the group. Identification is a feeling of inner warmth that tells the student he has security in the group and that his ideas and words will have meaning in the group. Group identification is an important key to successful seminar work. It is the cohesiveness that holds the group together and helps members work well together.

Fourth, while identification may be important, it cannot exist unless the teacher establishes a rapport with the group. A free atmosphere is structured in such a way as to permit give and take among students and between students and teachers.

Finally, the group needs to evaluate itself from time to time. This will help students move along in their understanding of discussion and subject matter.

In order to provide the criteria suggested above, a new role on the part of the teacher is called for. It is a role more concerned with learning and less concerned with teaching. This new role has been most difficult for teachers to achieve. The seminar will not work effectively however unless teachers are willing to make the adjustment. This point is made in rather strong terms by Thelen.

> "It is unfortunately all too clear that to get group investigation in classrooms will require two revolutions in practice. The first is the shift from the idea of "subjects" as collections of predigested organizations of information; and the second is the shift from governance of the classroom by teacher edict to governance by decisions developed from, or at least validated by, the experience of the group--within boundaries and in relation to phenomena identified by the teacher as objects for study."[1]

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[1] Thelen, op. cit., p. 148.

Let us now turn our attention to the specific roles of persons responsible for helping the group to function more effectively. We shall begin with a study of the role of the teacher.

A. The Role of the Teacher

The first responsibility of the teacher is to see that the discussion is related to the other parts of the instructional program. Through the information presented in the larger learning group and through the knowledge by combining it with student interest, special talents and insight. The seminar is not a rehash of what students already have learned, it is applied knowledge, exploring different approaches, discovering differences of opinions and turning up further areas for inquiry.

Secondly, the teacher has to be adequately prepared for the discussion period. A teacher has a lot to say as to what will go on in the discussion session itself, but he usually has his say prior to the seminar, not during it. This is achieved largely through work with student leaders. This point will be discussed in the next section.

Next, the teacher has the role of expeditor, of one who sees to it that things are constantly moving, again, this requires individual teacher preparation as well as working with student leadership.

Fourth, the teacher is a resource person. As pointed out by Edward Grodsky of Ridgewood High School, the students look up to the teacher when they hit a spot where they cannot gather information themselves. This is where the teacher plays an important part in the seminar itself.

The fifth role of the teacher is to work with the student recorder, observer and particularly the student leader. The teacher helps the group leader in organization of his material and in understanding discussion techniques.

Finally, as stated earlier, the teacher has the responsibility to help students understand the group process and the place of the individual in the group. This will assist the teacher in establishing a proper climate for true discussion.

The teacher's role in such a forum is a difficult one. The teacher's work is mainly behind the scenes. He must help the student leader plan successfully. He must direct the discussion without becoming involved. This may mean asked a question when the group wanders from the topic or suggesting a point that has not been mentioned. The teacher must be available to present new information, or to correct false facts, but he must wait until students have had an opportunity to supply the needed information themselves. In other words, in a properly operating seminar the teacher must "teach" without teaching; must lead without leading; must control without controlling. Truly it is not an easy occupation."[1]

B. The Role of the Group Leader

The role of the group leader is often the role of the teacher. The teacher is the leader of the group, at least in the early stages of its existence. As the members become more skilled in the group process, students will gradually take over the leadership role. Many factors will determine when this shift will take place. Regardless of who assumes the leadership role the tasks to be performed are the same. Let us now examine a few of these specific tasks.

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[1] "Why Seminars Don't Work." op. cit. p. 52.

1. Planning the Discussion Approach

It is necessary for the leader to think through all the things that are involved and be ready with background information and material prior to the discussion session. This does not mean that the leader will provide solutions to the problem but will think about ways of approaching, analyzing and considering the problem.

One approach that can be used is to prepare a list of questions designed to open discussion and direct it toward the desired objectives. While this forces the leader to plan ahead there is one danger in the method. When questions have been pre-arranged the members of the group may be onctent to go through the questions as if they were answering questions in an examination, answering in a very specific fashion. If the right questions are prepared, however, and if the group is aware of its goals this approach should prove helpful.

2. Creating a Friendly Atmosphere for Discussion

We have already discussed this point under the heading "role of the teacher." Again, an air of informality centered on respect for the individual is to be created.

3. Getting the Discussion Started

It is obvious that the first few moments of a discussion are the hardest. An opening statement which reviews the purpose and nature of the discussion period and what is expected of the group is almost a necessity. The leader should avoid making decisions on which direction the group should go or just what it should do to deal with the problem. He merely gets the group started. The following are a few examples of questions which may be used to open the discussion:

"1. What do you think about the problem as stated?
2. What has been your experience in dealing with this problem?
3. Would anyone care to make suggestions on facts we need to better our understanding of the problem?"[1]

Another approach to opening discussion may be through the use of a startling statement. Sometimes a shocking set of data or a very significant statement may set the group in action.

4. Helping the Group Members to Move Ahead with Continuity and Focus.

Discussion is a step by step process toward an ultimate goal. The leader helps the group in this process by summarizing important points, by asking for reviews of the discussion progress and by asking pertinent questions. The asking of the right questions can be a most helpful tool in keeping the discussion moving. Keltner devotes a section of his book to the topic of questioning. Space does not permit us to discuss all the ideas presented. The following summary of the criteria for good questions will prove helpful at this point.

"1. Questions should be pertinent to the matter at hand.
2. Questions should be warm and personal but they should not deal with personalities.
3. Questions should be clear and precise.
4. Questions should be anserable.
5. Questions should be searching.
6. Questions should have a definite purpose.
7. Questions which contain answers in them should be avoided.
8. The questions are usually brief."[2]

The following questions are presented as examples of the type the discussion leader may ask in his efforts to keep the discussion moving along and properly focused:

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[1] Trecker, Harleigh B. and Trecker, Audrey R., How to Work with Groups, New York: Morrow and Co., 1962, p. 70.

[2] Keltner, op. cit. pp. 229-230.

1. I wonder if we have spent enough time on this phase of the problem? Should we not move to another aspect of it?
2. Have we gone into this part of the problesm far enough so that we might now shift our attention and consider this additional idea?
3. In view of the time we have set for ourselves would it not be well to look at the next question before us?
4. Where are we not in relation to our goal for the disucssion?
5. Would you like to have me review my understanding of the things we have said and the progress we have made in the discussions?"[1]

5. Helping the group Members Participate

The problem of the non-participant is one which may prove most frustrating to the discussion leader. In finding ways of helping group members participate, let us first remember that in order for people to talk they have to have something to talk about. It has been pointed out in this paper on several occasions that the seminar is related to other parts of the instructional program. Therefore, we expect students to have something to talk about in small group discussion periods. Regardless of the amount of knowledge certain people have, they still may have difficulty expressing their ideas.

The following points are suggestions the leader may put to use in helping these people.

First, by creating an atmosphere of acceptance and security, the reluctant participant will be more likely to talk. We know that people should feel secure and free from threat in order to be themselves and expose their ideas or feelings to others.

A second approach may be through the use of the startling statement referred to earlier. The leader may attack a popular point of view, or make a statement shocking in nature.

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[1] Trecker and Trecker, op. cit. p. 70.

The leader can ask questions pointed indirectly at the non-participant. Here are two examples:

"1. Now that we have heard from a number of our members, would others who have not spoken like to add their ideas?
2. How do the ideas presented thus far sound to those of you who have been thinking about them?"[1]

A fourth suggestion is to give inactive members a specific assignment. Perhaps a special assignment can be made to one of the members and report his findings to the group. Another idea may be to put the non-participant in charge of summarizing the discussion.

A final approach is simply "waiting them out." The indirect approach has been used in counselling situations for some time. The client-centered approach, applied first by Carl Rogers,[2] has as its fundamental premise that human beings have within themselves constructive impulses which can lead to creative and mature behavior. When applied to group discussion the leader would wait for the participants to come forth on their own. While there is much to be said about "waiting them out", (man discussion leaders are much too fearful of silence) the fact remains that only a highly skilled leader can use a complete non-directive approach.

C. The Role of the Group Observer

In order for a group to function properly, it must evaluate itself. The group observer can help in this important task. Such a person does not participate regularly in discussion so that he can concentrate on what is happening. The observer attempts to analyze why the group is successful or is having difficulties in discussing a give lesson. Often the observer role will be played by the teacher. Keltner defines the role of the group observer as follows:

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[1] Trecker and Trecker, op. cit. p. 70.

[2] Rogers, Carl, Client Centered Therapy, Boxton: Houghton Mifflin

> "His distinctive character is as a reporter whose major aim is to see what is happening and report this to the group. He is, in a sense, a mirror whereby the group can see itself as it operates. He is interested in how the committee works rather than what it works on. His job is to help the group function more effectively by providing an insight into the inner machinery of ther group process."[1]

The use of the observer has been suggested by experts in group discussion for sometime. However, its application in the classroom has been slow to come. The use of an observer involves group evaluation and this is something most groups resist in the beginning. Because the techniques involved are extremely important, it is recommended by the writer that teachers familiarize themselves with the literature in the field before attempting to use the observer approach. A good place to begin such an investigation would be by reading some of the work of Kenneth Benne.[2]

D. The Role of the Recorder

The work of the recorder is to keep a running record of the content of the discussion so that, at any time, he can report back to the group what has been discussed. Since the group is interested more in what was said than who said it, it is unnecessary to record the names of persons making contributions. Usually the recorder provides a summary of the discussion at the close of the period. The following summary of a guide for recorders will help define the role more clearly:

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[1] Keltner, op. cit. p. 300.

[2] See for example Benne, Kenneth D. and Mentyan, Bozedor. Human Relations in Curriculum Change. Springfield, Ill.: Illinois State Department of Education. 1949. pp. 141-160.

"1. Keep track of major contributions to the discussion.
    A. Points upon which there was cleavage of opinion in the the group.
    B. Points upon which the group agreed or on which formal action was taken.
    C. Points where the recorder is not sure of the group opinions.
    D. Points mentioned, but not discussed which the group may wish to consider later.

2. Report to the group what was discussed and concluded rather than merely what the discussion was about.

3. Be ready to report at any time and make an inclusive report at the end of the session.

4. Ask for suggestions from the group as to how the recorder's work may be made more helpful."[1]

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[1] Benne and Mentyan, op. cit. p. 139.

SUMMARY

As a result of this study, the writer has a clearer picture of the objectives of group discussion as well as techniques helpful to persons responsible for providing leadership in discussions. The small group discussion approach has much promise and deserves our most serious consideration. The greatest need for further research is in the area of technique. Teachers, schools of education, and administrative groups must concentrate on the task of developing techniques of discussion that will help the teacher responsible for group leadership.

BIBLIOGRAPHY

1. Bales, R. P. "Channels of Communication in Small Groups." American Sociological Review, 1951, pp. 461-468.

2. Barnlund, Dean C. and Haiman, Franklin S. The Dynamics of Discussion. Boston, Mass., Houghton Mifflin Co., 1960, pp. 461.

3. Benne, Kenneth D., and Bradford, Leland P., Lippit, Ronald. Group Dynamics and Social Action. New York, N.Y. Defamation League of B'nai B'rith, 1950, pp. 61.

4. Benne, Kenneth D. and Muntyan, Bozida. Human Relations in Curriculum Change. Springfield, Illinois State Department of Education, 1949, pp. 316.

5. Bonner, Hubert. Group Dynamics. New York, N.Y. The Ronald Press Co., 1959, pp. 531.

6. Carter, L. F. "The Relations of Categorization and Ratings in the Observation of Group Behavior," Human Relations, April 1951.

7. Heller, Melvin P. and Belford, Elizabeth. "Team Teaching and Staff Utilization in Ridgewood High School." Bulletin of the National Association of Secondary School Principals, January, 1962.

8. Howard, Eugene R. "The School of the Future," Curriculum Bulletin Oregon Association of Secondary School Principals, April 1963, p. 4.

9. Olmsted, Michael S. The Small Group, New York, N.Y., Random House, 1959, pp. 159.

10. Keltner, John W. Group Discussion Processes. New York, N.Y., Longmans, Green and Co., 1951, pp. 373.

11. "The New Look in Class Schedules, Teacher Responsibilities and Student Programs." School Management, October 1961, pp. 788-814.

12. Thelen, Herbert A. Education and the Human Quest. New York, N.Y., Harper Brothers, 1960, pp. 114.

13. Trecker, Harleigh B. and Trecker, Andrey R. How to Work with Groups. New York, N.Y., Morrow and Co., 1956, pp. 186.

14. Trump, J. Lloyd, Images of the Future, A New Approach to the Secondary School. Washington., D.C. National Association of Secondary School Principal, 1954, pp. 46.

15. Trump, J. Lloyd, New Directions to Quality Education. The Secondary School of Tomorrow. Washington, D.C., National Association of

16. Trump, J. Lloyd And Baynham, Dorsey. Focus on Change Grade to Better Schools, Chicago, Illinois, Rand McNally,Co., 1961, pp. 147.

IV. HOW CAN THE SMALL DISCUSSION GROUP FUNCTION MORE EFFECTIVELY

This is the question most frequently asked by educators interested in small-group discussion. Teachers employing the seminar approach have discovered extreme difficulties in conducting meaningful discussions. The following quote is typical of the reaction of many people studying the staff utilization proposals:

> "Where the program falls down is in the seminar. Hardly a handful of teachers really know how to use them properly. Most teachers approach seminars as classes with fewer pupils. They work with them exactly the same way they would work with classes of 25 or 30 students."[1]

Dr. Trump points out in the report of the Staff Utilizqation Commission that teachers had difficulty with small groups. For example, he notes observations of teachers who sometimes remained standing by a portable blackboard giving directions, asking questions, and writing answers during much of the period. As many as one-half of the students in several observed instances never contributed an idea during the entire period even though there were only ten to fifteen of them in the group. Most of the time was spent by the teacher in asking questions each answered by one student without discussion among pupils.[2]

How can we help teachers overcome these difficulties? First, we must look at small group discussion in a different light than most of us have in the past. As has already been suggested, the small group has an identity all its own - it has a special purpose. Seminars are designed to allow students to do things they cannot do in an ordinary classroom.

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[1] "Why Seminars Don't Work", School Management, June, 1962, p. 552.

[2] Trump, op. cit., p. 25.

Secondly, students need assistance in understanding the purpose of small group discussion and his place in it. The purposes outlined in section two of this paper should be known by students as well as teachers.

Third, students need assistance in identifying themselves to the group. Identification is a feeling of inner warmth that tells the student he has security in the group and that his ideas and words will have meaning in the group. Group identification is an important key to successful seminar work. It is the cohesiveness that holds the group together and helps members work well together.

Fourth, while identification may be important, it cannot exist unless the teacher establishes a rapport with the group. A free atmosphere is structured in such a way as to permit give and take among students and between students and teachers.

Finally, the group needs to evaluate itself from time to time. This will help students move along in their understanding of discussion and subject matter.

In order to provide the criteria suggested above, a new role on the part of the teacher is called for. It is a role more concerned with learning and less concerned with teaching. This new role has been most difficult for teachers to achieve. The seminar will not work effectively however unless teachers are willing to make the adjustment. This point is made in rather strong terms by Thelen.

> "It is unfortunately all too clear that to get group investigation in classrooms will require two revolutions in practice. The first is the shift from the idea of "subjects" as collections of predigested organizations of information; and the second is the shift from governance of the classroom by teacher edict to governance by decisions developed from, or at least validated by, the experience of the group-within boundaries and in relation to phenomens identified by the teacher as objects for study."[1]

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1. Thelen, op. cit., p. 148.

Let us now turn our attention to the specific roles of persons responsible for helping the gourp to function more effectively. We shall begin with a study of the role of the teacher.

A. The Role of the Teacher

The first responsibility of the teacher is to see that the discussion is related to the other parts of the instructional program. Through the information presented in the larger learning group and through the knowledge gained in student individual study the teacher sees that pupils bring their outside information to the seminar. The small group builds on this knowledge by combining it with student interest, special talents and insight. The seminar is not a rehash of what students already have learned, it is applied knowledge, exploring different approaches, discovering differences of opinions and turning up further areas for inquiry.

Secondly, the teacher has to be adequately prepared for the discussion period. A teacher has a lot to say as to what will go on in the discussion session itself, but he usually has his say prior to the seminar, not during it. This is achieved largely through work with student leaders. This point will be discussed in the next section.

Next, the teacher has the role of expediter, of one who sees to it that things are constantly moving, again, this requires individual teacher preparation as well as working with student leadership.

Fourth, the teacher is a resource person. As pointed out by Edward Grodsky of Ridgewood High School, the students look up to the teacher when they hit a spot where they cannot gather information themselves. This is where the teacher plays an important part in the seminar itself.

The fifth role of the teacher is to work with the student recorder, observer and particularly the student leader. The teacher helps the group leader in organization of his material and in understanding discussion techniques.

Finally, as stated earler, the teacher has the responsibility to help students understand the group process and the place of the individual in the group. This will assist the teacher in establishing a proper climate for true discussion.

The teacher's role in such a forum is a difficult one. The teacher's work is mainly behind the scenes. He must help the student leader plan successfully. He must direct the discussion without becoming involved. This may mean asking a question when the group wanders from the topic or suggesting a point that has not been mentioned. The teacher must be available to present new information, or to correct false facts, but he must wait until students have had an opportunity to supply the needed information themselves. In other words, in a properly operating seminar the teacher must "teach" without teaching; must lead without leading; must control without controlling. Truly it is not an easy occupation."[1]

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[1] "Why Seminars Don't Work", op. cit. p. 52.

B. The Role of the Group Leader

The role of the group leader is often the role of the teacher. The teacher is the leader of the group, at least in the early stages of its existence. As the members become more skilled in the group process, students will gradually take over the leadership role. Many factors will determine when this shift will take place. Regardless of who assumes the leadership role the tasks to be performed are the same. Let us not examine a few of these specific tasks.

1. Planning the Discussion Approach

It is necessary for the leader to think through all the things that are involved and be ready with background information and material prior to the discussion session. This does not mean that the leader will provide solutions to the problem but will think about ways of approaching, analyzing and considering the problem.

One approach that can be used is to prepare a list of questions designed to open discussion and direct it toward the desired objectives. While this forces the leader to plan ahead there is one danger in the method. When questions have been pre-arranged the members of the group may be content to go through the questions as if they were answering questions in an examination, answering in a very specific fashion. If the right questions are prepared, however, and if the group is aware of its goals this approach should prove helpful.

2. Creating a Friendly Atmosphere for Discussion

We have already discussed this point under the heading "role of the teacher". Again, an air of informality centered on respect for the individual is to be created.

2. Getting the Discussion Started

It is obvious that the first few moments of a discussion are the hardest. An opening statement which reviews the purpose and nature of the discussion period and what is expected of the group is almost a necessity. The leader should avoid making decisions on which direction the group should go or just what it should do to deal with the problem. He merely gets the group started. The following are a few examples of questions which may be used to open the discussion:

1. "What do you think about the problem as stated?
2. What has been your experience in dealing with this problem?
3. Would anyone care to offer suggestions on facts we need to better our understanding of the problem?"[1].

Another approach to opening discussion may be through the use of a startling statement. Sometimes a shocking set of data or a very significant statement may set the group in action.

4. Helping the Group Members to Move Ahead with Continutiy and Focus.

Discussion is a step by step process toward an ultimate goal. The leader helps the group in this process by summarizing important points, by asking for reviews of the discussion progress and by asking pertinent questions. The asking of the right questions can be a most helpful tool in keeping the discussion moving. Keltner devotes a section of his book to the topic of questioning. Space does not permit us to discuss all the ideas presented. The following summary of the criteria for good questions will prove helpful at this point.

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[1] Trecker, Harleigh B. and Trecker, Audrey R. How to Work with Groups, New York: Morrow and Co., 1952. p. 70.

"1. Questions should be pertinent to the matter at hand.
2. Questions should be warm and personal but they should not deal with personalities.
3. Questions should be clear and precise.
4. Questions should be answerable.
5. Questions should be searching.
6. Questions should have a definite purpose.
7. Questions which contain answers in them should be avoided.
8. The questions are usually brief."[1]

The following questions are presented as examples of the type the discussion leader may ask in his efforts to keep the discussion moving along and properly focused:

"1. I wonder if we have spent enough time on this phase of the problem? Should we not move to another aspect of it?
2. Have we gone into this part of the problem far enough so that we might now shift our attention and consider this additional area?
3. In view of the time we have set for ourselves would it not be well to look at the next question before us?
4. Where are we not in relation to our goal for the discussion?
5. Would you like to have me review my understanding of the things we have said and the progress we have made in the discussions?"[2]

The problem of the non-participant is one which may prove most frustrating to the discussion leader. In finding ways of helping group member participate, let us first remember that in order for people to talk they have to have something to talk about. It has been pointed out in this paper on several occasions that the seminar is related to other parts of the instructional program. Therefore, we expect students to have something to talk about in small group discussion periods. Regardless of the amount of knowledge certain people have, they still may have difficulty expressing their ideas.

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1. Keltner, op. cit. pp. 229-230.

2. Trecker and Trecker, op. cit. p. 70.

The following points are suggestions the leader may put to use in helping these people.

First, by creating an atmosphere of acceptance and security, the reluctant participant will be more likely to talk. We know that people whould feel secure and ree from threat in order to be themselves and expose their ideas or feelings to others.

A second approach may be through the use of the startling statement referred to earlier. The leader may attack a popular point of view, or make a statement shocking in nature.

The leader can ask questions pointed indirectly at the non-participant. Here are two examples:

> "1. Now that we have heard from a number of our members, would others who have not spoken like to add their ideas?
> 2. How do the ideas presented thus far sound to those of you who have been thinking about them?"[1]

A fourth suggestion is to give inactive members a specific assignment. Perhaps a special assignment can be made to one of the members and report his findings to the group. Another idea may be to put the non-participant in charge of summarizing the discussion.

A final approach is simply "waiting them out." The indirect approach has been used in counseling situations for some time. The client-centered approach, applied first by Carl Rogers,[2] has as its fundamental premise that human beings have within themselves constructive impulses which can lead to creative and mature behavior. When applied to group discussion the leader would wait for the participants to come forth on their own. While there is much to be said about "waiting them out", (Many discussion leaders are much too fearful of silence) the fact remains that only a highly skilled leader can use a complete non-directive approach.

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[1] Trecker and Trecker, op. cit. p. 70.

[2] Rogers, Carl. Client Centered Therapy Boxton: Houghton Mifflin

C. The Role of the Group Observer

In order for a group to function properly, it must evaluate itself. The group observer can help in this important task. Such a person does not participate regularly in discussion so that he can concentrate on what is happening. The observer attempts to analyze why the group is successful or is having difficulties in discussing a given issue. Often the observer role will be played by the teacher. Keltner defines the role of the group observer as follows:

> "His distinctive character is as a reporter whose major aim is to see what is happening and report this to the group. He is, in a sense, a mirror whereby the group can see itself as it operates. He is interested in how the committee works rather than what it works on. His job is to help the group function more effectively by providing an insight into the inner machinery of the group process."[1].

The use of the observer has been suggested by experts in group discussion ofr sometime. However, its application in the classroom has been slow to come. The use of an observer involves group evaluation and this is something most groups resist in the beginning. Because the techniques involved are extremely important, it is recommended by the writer that teachers familiarize themselves with the literature in the field before attempting to use the observer approach. A good place to begin such an investigation would be by reading some

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1. Keltner, op. cit. p. 300.

of the work of Kenneth Benne.[1]

D. The Role of the Recorder

The work of the recorder is to keep a running record of the content of the discussion so that, at any time, he can report back to the group what has been discussed. Since the group is interested more in what was said than who said it, it is unnecessary to record the names of persons making contributions. Usually the recorder provides a summary of the discussion at the close of the period. The following summary of a guide for recorders will help define the role more clearly?

"1. Keep track of major contributions to the discussion.
    A. Points upon which there was cleavage of opinion in the group.
    B. Points upon which the group agreed or on which formal action was taken.
    C. Points where the recorder is not sure of the group opinions.
    D. Points mentioned, but not discussed which the group may wish to consider later.

2. Report to the group what was discussed and concluded rather than merely what the discussion was about.

3. Be ready to report at any time and make an inclusive report at the end of the session.

4. Ask for suggestions from the group as to how the recorder's work may be made more helpful."[2]

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[1] See for example Benne, Kenneth D. and Mentyan, Bozedor. Human Relations in Curriculum Change. Springfield, Ill.: Illinois

[2] Benne and Mentyan, op. cit. p. 139.

SUMMARY

As a result of this study, the writer has a clearer picture of the objectives of group discussion as well as techniques helpful to persons responsible for providing leadership in discussions. The small group discussion approach has much promise and deserves our most serious consideration. The greatest aneed for further research is in the area of technique. Teachers, schools of education and administrative groups must concentrate on the task of developing techniques of discussion that will help the teacher responsible for the group leadership.

BIBLIOGRAPHY

1. Bales, R.P. "Channels of Communication on Small Groups." *American Sociological Review*, 1951, pp. 461-468.

2. Barnlund, Dean C. and Haiman, Franklin S. *The Dynamics of Discussion*. Boxton, Mass. Houghton Mifflin Co., 1960,pp. 461.

3. Benne, Kenneth D., and Bradford, Leland P., Lippit, Ronald. *Group Dynamics and Social Action*. New York, N.Y. Defamation League of B'nai B'rith, 1950. pp. 61.

4. Benne, Kenneth D. Muntyan, Bozidar. *Human Relations in Curriculum Change*. Springfield, Illinois State Department of Education, 1949. pp. 316.

5. Bonner, Hubert. *Group Dynamics*. New York, N.Y. The Ronald Press Co. 1959. pp. 531.

6. Carter, L.F. "The Relations of Categorization and Ratings in the Observation of Group Behavior" *Human Relations*, April 1951 pp. 239-254.

7. Heller, Melvin P. and Belford, Elizabeth. "Team Teaching and Staff Utilization in Ridgewood High School." *Bulletin of the National Association of Secondary School Principals*, January,

8. Howard, Eugene R. "The school of the Future", *Curriculum Bulletin Oregon Associates of Secondary School Principals*, April 1963, p. 4.

9. Olmsted, Michael S. *The Samll Group*, New York, N.Y. Random House, 1959, pp. 159.

10. Keltner, John W. *Group Discussion Processes*. New York, N.Y. Longmans, Green and Co., 1957, pp. 373.

11. "The New Look in Class Schedules, Teacher Responsiblilities and Student Programs." *School Management*, Oct. 1961. pp. 78-824.

12. Thelen, Herbert A. *Education and the Human Quest*. New York, N.Y.: Harper Brothers, 1960, pp. 224.

13. Trecker, Harleigh B. and Trecker, Audrey R. *How to Work with Groups*. New York, N.Y. Morrow and Co. 1952, pp. 166.

14. Trump, J. Lloyd, Images of the Future, *A New Approach to the Secondary School*. Washington, D.C.: National Association of Secondary School Principals, 1959, pp. 46.

15. Trump, J. Lloyd, *New Directions to Quality Education* *The Secondary School of Tomorrow*. Washington, D.C., National Association of Secondary School Principals, 1960, pp. 14.

16. Trump. J. Lloyd and Baynham, Dorsey. *Focus on Change Grade to Better Schools*, Chicago, Illinois: Rand McNally Co., 1961 pp. 147.

SMALL-GROUP DISCUSSION

Grouping 15 or fewer students in separate classes aims to develop better interpersonal relations among students while they learn essential knowledge, effective communication of ideas, problem solving and divergent thinking.

GUIDELINES

1. Approsimately 15 students represents the maximum number that can effectively participate in group discussion activities.
2. Small groups are constituted to provide needed discussion experiences for particular kinds of students.
3. Effective teacher participation in student discussions calls for extremely high levels of professional competence.
4. The time required for small-group activities diminishes as students become more sophisticated discussants.
5. Small-group discussion is related to large-group instruction and independent study in all subject areas.

Frequently we clarify ideas and are stimulated for further inquiry as a result of conversations we have with other persons. Also, we use such opportunities to persuade other persons to accept our beliefs. New acquaintances and friendships develop in such chance or planned meetings. Life would be quite incomplete without the discussions we hold with other persons in small groups.

Education in schools also requires participation in small groups. However, because schools exist to improve pupil behavior, specific training programs involving small-group discussions are essential. The conventional class of 25-30 students is too large for these training experiences. Dividing the class into two or three sub-groups does not represent a good substitute for classes of 15 or fewer because a competent teacher cannot be physically present full time to assist each of these small groups.

These small classes represent essential education for citizenship in a democracy. Students need to learn to discuss controversial matters, to communicate effectively, to respect the opinions of others, and to deal with peiple whose backgrounds differ from their own. The discussions they hold reinforce and use the knowledge the students have learned in large groups and in their own independent study. They crystallize values and from attitudes in much the same was as these goals are accomplished in life outside the school.

Small-group disscussion requires new roles for both teachers and students. However, none of them typically has had adequate experience and training to achieve maximum benefit from these arrangements. For example, teachers worry that the group is not covering a predetermined body of subject matter, Students are likely to have similar concerns. Most teachers and students can easily miss the major purposes of the small-group activities. Teachers need to cast themselves in the role of listener, advisor, and as a co-participant with the students. Students need to learn a variety of group roles: leader, recorder, observer, and the kinds of functions served by a variety of gorup members.

Experience in schools organizing small groups, and considerable research in group dynamics, indicates the maximum desirable size of these groups to be approximately 15. That is the largest number of students that logistically may have an opportunity to become actively involved in discussion during a reasonable period of time. Most schools believe that from 30 to 50 minutes is a desirable length of time for these grup discussions.

The number of meetings per week is best determined by the opinions of teachers and students. There is a tendency to schedule more meetings than necessary because of the predisposition to cover a given area of content rather than to be concerned about the development of attitudes, values, and competencies in discussion and in group relationships. Since the latter goals are common to all of the small-group activities in various subject areas in the school, a given subject may actually operate with fewer meetings. As teachers and students become more experienced and competent in group discussions, fewer meetings are needed or at least the sessions can be briefer.

Small groups are constituted on a variety of bases in accordance with professional decisions or teachers and counselors. A policy should be early established in the minds of everyone that the composition of small groups will be changed frequently. For example, if teachers and counselors determine that two or three students are dominating the discussion in a given group, it is good both for those students and the others, that they be transferred to another group which contains stronger student discussants. Both groups, the one they had been in and the new group, can benefit from the transfer and the groups in turn will have beneficial effects upon the individual students themselves.

Groups may be composed on a variety of other bases. Friendships, emotional maturity, sex, quality of past school work, special interests, vocational or educational goals, and many others, may be considered. Counseling records, interest inventories, teacher opinions, sociometry, school records, and other appropriate information are utilized in making original assignments of students to groups and in changing group composition. Periodic discussions of teachers, counselors, and the principal or assistant principal who know these students should be scheduled to exchange information and ideas about ameliorative arrangements for students.

One of the issues that divides teachers of small groups is whether students should originally be selected as leaders or whether the teacher should serve that role. The arguments pro and con are quite obvious. If a teacher is incapable or unwilling to relinquish the leadership role, it is probably better never to assume it. On the other hand, much can be said for a teacher's assuming that role for the first two or three meetings of the group to provide an excellent example of how a leader should relate to the group. Such a brief time also permits natural leadership to emerge from the group so that the teacher within two or three sessions can relinquish leadership to a given individual. The teacher should then alternate between the roles of group observer and consultant, both of which roles are shared with students.

The first task of the group leader, student or teacher, is to help the group decide on the issues it wishes to discuss, to clarify the issues, and to help the group plan procedures. During the discussion the leader tries to involve as many of the group members as possible. For example, noting that some members have not participated, he will rasie a question regarding what the group is missing by not knowing what the others are thinking. He may even call on some of them for expressions or assistance. If the group departs from the subject of the discussion, the leader tells them what is happening and asks the group to decide whether they want to turn to a new topic or continue discussion of the original one. If the discussion is going badly, the leader calls on the group observer for reactions on why the discussion is not going well. Periodically the leader calls on the recorder to summarize the discussion to date, or he may call on the consultant for clarification or for more adequate information if that seems to be needed. The leader also helps the group to remain conscious of the time limits on their meeting and thus may help them to focus their discussion more sharply. All in all, the leader aims to help individual members and the group to become more effective and efficient in their discussions.

Some member of the group should be appointed recorder. This individual keeps a record of the content of the discussion so that he can report back to the group on request. Since the group is interested more in what was said then in who said it, it is unnecessary to record the names of persons making contributions. The recorder notes the areas of agreement and disagreement, rather than everything that was said by each person making a contribution. Usually the recorder provides a summary of the discussion at the close of the period.

Some student, in addition to the teacher, should be asked to serve as a group observer. This person does not participate regularly in the discussions so that he can concentrate on what is happening. He will find it helpful to keep a tally on who participates in the discussion so he can report whether some persons including the leader, are monopolizing the group time or others are not contributing. The observer attempts to analyze why the group is particularly successful or is having difficulties in discussion a given issue. When called upon by the group leader, he raises questions with the group on these points of evaluation, trying to help the group grow in the quality of their discussion rather than serving as a conventional teacher scolding some people and praising others for what they say.

The teacher, a member of the group, or someone specially invited to meet with the group for a given discussion, may serve as a consultant to the group. This person is not expected to make a speech or to monopolize the discussion. He is there to bring a certain type of information and experience that other members of the group may not possess. This is a very difficult role for a teacher because the purpose of the consultant is not to set too high a level of discussion or to dominate the grup because of the status of this position. On the other hand, if a teacher or other consultant finds a group member making such a gross error that the discussion is going in the wrong direction, the teacher has the responsibility to correct that information or statement. Deciding whether the error really matters is a difficult one that tests the consultant's qualities as a helper of students learning to discuss more effectively.

Periodically, during the early history of a group, the teacher will meet with the group leader, recorder, and observer to help them grow in their various responsibilities. The teacher also will occasionally talk to the members of the group helping them as individuals and as a group to understand better what they are doing.

There is need to analyze the member who contributes little, or who talks too much, or who constantly gets the group off the subject, or who asks irrelevant questions, or who irritates by being antagonistic constantly, and the like. Conversely, efforts need to be made to point out group members who are especially helpful to the group by such actions as bringing desirable information at the right time, by summarizing the discussion, by helping to clarify issues, and by helping non-cooperative group members become cooperative in the interests of gorup progress.

Working with small-group discussion challenges very high professional compotencies on the part of teachers. A study of gorup dynamics can help in the development of these competencies. Acquaintance with the principles of sociometry and behavioral physchology is essential. Today's conventional school does not provide teachers with instructional opportunities as described in this presentation. On the other hand, if teachers do not take advantage of the opportunities in small-group discussion somewhat along the lines described here, there is not purpose in organizing classes of 15 or fewer.

GROUP DEVELOPMENT

Bernard M. Bass

Like individuals, groups learn. The eventual performance of a group depends on both individual learning of its members and how well the members learn to work with each other, how well they make use of each other and how well they coordinate their efforts. Groups can and must learn how to use the resources their members bring to the group. Four stages have been described in the learning process for committees, discussion groups and many kinds of work groups.

Stages in Group Development

A four-stage learning process describes the development and maintenance of typical groups responsible for planning, operating decisions, sharing information or evaluating. First, members must learn to accept each other and develop mutual confidence and trust. Only after this has occurred can they proceed to communicate openly and freely and to act and react with their full resources to set and achieve desired goals at a high rate of productivity. Finally, when such productivity has been demonstrated, the immature formal controls based on power can be modified so the group operates with more spontaneous informality. The members move from concern about trusting each other to concern about how to communicate effectively. From there they proceed to concern about what goals to set and finally to concern about how controls shall be maintained.

First Stage: Developing Mutual Acceptance and Membership

Members initially are hampered by their mistrust of each other (which they are often quick to deny). They respect the motives of others, but they fear their own inadequacies as well as those of other members. Protection is sought in cliques and mutual admiration pairings. Remaining defensive, they restrict the range of permitted behavior through conformity and ritual.

When members learn to accept each other and themselves, they can easily express their feelings and conflicting attitudes. Norms are established about how they will proceed, but individual differences are tolerated. Legitimate influence is accepted, and members develop a liking for each other.

Second Stage: Communication and Decision-Making

During this phase, what were first ambiguous expressions are clarified in meaning. Sufficient time is spent in reaching decisions.

Third Stage: Motivation and Productivity

This group has reached matumity in resolving problems of its members' motivation when creativity is observed in sustained work, when members are involved in the work, when extrinsic or irrelevant rewards are not needed to maintain as high a level of productivity and when members cooperate instead of competing.

Fourth Stage: Control and Organization

A group has succeeded in effectively organizing when work is seen to be allocated according to the ability to do it and by agreement among those involved. Members are later dependent, each on each other. The organization remains flexible and ready to change in the face of new challenges, informality and spontaniety is stressed with actually little concern about the form of the organization.

The Mature Group

1. The members function as a unit. The group works as a team. The members do not disturb each other. . .
2. The members participate fully in group effort. They work hard when there is something to do. Members do not loaf if they get the opportunity. . .
3. The members are oriented toward a single goal. They work for common purposes. . .
4. The members have the equipment, tools and skills necessary to atain the group's goals. The group members are taught various parts of their jobs by experts. The group is not shorthanded. . .
5. Members ask and receive suggestions, opinions and information from each other, if a member is uncertain about something, he stops working and finds out. The members talk to each other frequently. . .

Thus, the effective work group is one in which the individual members are highly interdependent, coordinated and cooperative in their efforts. They are capable and highly motivated as individuals, and information flows freely among them.

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SECTION IV

WHAT IS INDEPENDENT STUDY ALL ABOUT

During the past few years, considerable attention has been focused in the writings of professional journals on student independent study. In this presentation we will attempt to analyze independent study by discussing what independent study is, why it is important, and how it can be best implemented in the total instructional program.

WHAT IS INDEPENDENT STUDY?

Basically, independent study involves the pursuing and acquisition of knowledge and skills by students with limited assistance from their classroom teachers. This is in contrast to the imparting of knowledge from teacher to student as is provided through lectures, demonstrations, and discussion.

We know that independent study is not new. Certainly, much of what we learn is learned outside the classroom. The student's natural quest to satisfy his curiosity leads to a great deal of independent study. As far as formal education is concerned, the development of the homework policy some three years ago was an attempt to give some guidelines in this important area.

In a recent television interview comparing the American and English university systems Dr. Louis Benezet, President of Claremont Graduate School, stated that true education is self education. Certainly the emphasis on the tutorial approach at Oxford University in England is an example of how independent study can work. The entire educational program in this institution is based on the pursuit of knowledge by the individual. As pointed out by Dr. Benezet, American university people are beginning to see the value of such an approach and are making applications in this country.

WHY INDEPENDENT STUDY?

Self direction is one of the most important objectives of education. We would hope that by the time a student graduates from senior high school he would have developed a high sense of self direction and motivation. Unfortunately, much of the education in our schools today is teachers talking and (hopefully!) students listening. If pupils are to have an opportunity to develop self direction they must have an opportunity to experience it through independent study.

We live in a world of change. The amount of knowledge is accumulating very rapidly. Half of what an engineer studies today will be obsolete in ten years. Half of what he will need to know is not yet known by anyone. Ninety per cent of the scientists of history live today. The Educational Policies Commission of the National Education Association states that the average high school graduate today will have to be retrained at least three times during his lifetime just to keep pace with the acceleration of knowledge and technology.

It is obvious that one of the primary functions of education is to help students "learn how to learn."

Independent study

Independent study is also psychologically sound. From experience we know that we learn best what we discover for ourselves. Much of what we know about the techniques and processes of mastering information suggests that there may be altogether too much emphasis placed on the teacher "transmitting knowledge." Such emphasis implies that the teacher is a person whom the child depends upon to tell him what he needs to know. Valid research findings show us, however, that learning is better acquired when the teacher creates however, that learning is better acquired when the teacher creates situations whereby the student can discover knowledge for himself.

PHASES OF INDEPENDENT STUDY

For convenience sake, I have divided independent study into four phases. Also for convenience sake I have provided a label for each phase, which is intended to be an example of how this phase operates and not limited to the label or example.

Phase One (the lesson for tomorrow). This level of independent study is initiated by the teacher. It is the customary daily or weekly homework assignment. Heavy emphasis is placed upon drill activities and it is quite routine in nature. To be truly effective, homework should be individualized; that is, the assignments given to pupils should be based on the student's need to acquire certain information or develop certain skills. In some cases, however, it may be an assignment that all students in the class are to complete. The homework policy developed in our district a few years ago provides certain guidelines to teachers in this type of independent study assignment.

Phase Two (the self instruction package). Pase two of independent study is also teacher initiated but wider in scope than phase one. The teacher plans a series of experiences for the student. For example, in a unit on the civil war in an American History class the teacher might prepare a package of materials to guide the student through various independent study experiences. Part of this package might be distributed to the student in the form of directions, guide questions, etc. Much of the package would be kept in the library or learning resource center to be used by students during time reserved for independent study. Part of the student's instructions might call for the use of reference books in the library in order to answer questions asked by the teacher. The student might be asked to listen to tape recordings or records of music of the civil war period. He might also be asked to study maps of the civil war period. He might be asked to view slides and filmstrips concerning various facets of the unit.

In summary, then, the teacher guides students through various experiences which the student pursues on his own. These experiences might take place in the classroom, the learning resource center, at home, or at the public library. This phase of independent study calls upon the use of a much wider range of instructional materials that we have used in the past. We know learning takes place better when we can involve several senses. Some students learn best by reading, some by viewing, some by listening. What we are calling for here is a multi media approach to independent study.

Phase three (the project). This phase of independent study is also teacher initiated, but very open-ended. Students may have a choice of projects as part of requirements or as enrichment work in a course. The project is usually an experience which will involve considerable study by the student and will involve activities over an extended period of time.

After a project has been selected the student will then do the reading, viewing, listening and so on necessary to complete the project. He will report his findings in writing, orally, or in some type of presentation to the class or teacher. This phase of independent study provides an opportunity for the student to be very creative and somewhat self directive in completing the project.

Care must be taken by the teacher and the student in outlining what the project will involve in order for it not to become "busywork". So many activities which come under the title of classroom projects are the cut-and-paste type activity which has very limited learning value. The objectives of the project need to be well defined in advance.

Phase Four (individualized research). This is the highest level of independent study and is student initiated. It is a self directed type of activity with limited assistance from the teacher. It begins with the student selecting a topic which he believes to be of interest and value to him. He then asks a teacher to be his advisor in the project, the procedures to be followed and the system for reporting and evaluating the project. The project may extend over an entire semester or year with the student reporting his progress to the teacher periodically. The project need not be in conjunction with a course in which the student is currently enrolled.

This type of independent study activity might involve a student in science research utilizing the facilities of the science laboratory and the assistance of the science teaching staff. It may involve a research paper for a student in history. It may involve the production of clothing for the home economics student.

Often the quest for information will lead the student outside the confines of the school. With assistance from the student's advisor it may be possible for the pupil to arrange for interviews with experts in his field of interest. The pupil doing research in science therefore, may receive advice and assistance from staff members from a nearby university or industrial establishment.

TEACHER PLANNING FOR INDEPENDENT STUDY

So often teacher planning centers on classroom presentations and discussions. Actually, as the teacher plans he should consider at least four types of activities and think of experiences which can be provided within these four types of activities. First the teacher should consider what types of experiences need to be provided through presentations by the teacher. Second, what kinds of experiences need to be provided involving interaction among students (classroom discussion). Third, what kind of activities require student involvement in laboratory experiences (learning by doing). And, finally, what kinds of activities can be pursued by the student on his own.

If teachers, when planning a particular unit, would consider the placement of activities into the four categories presented above, many would be surprised at the number of things that are now being done in the classroom for all which could be done independently.

MATERIALS FOR INDEPENDENT STUDY

One of the most difficult tasks facing education in the next five years will be the preparation of materials to assist teachers and students in independent study. During the past five years considerable emphasis has been placed on the manufacturing and acquisition of equipment. Much of this equipment, such as the teaching machine has great possibilities for utilization in independent study. However, the software to be used in these machines is lacking. In the past most of our emphasis in independent study has been centered around the utilization of printed materials. We now see, however, potential in the proper utilization of a wide variety of media. Students learn not only by reading but also by seeing, listening, hearing, etc. Listed below is a very brief compilation of some of the media we could be taking advantage of and some of the ways in which it could be put to use in various subject areas. These are only a few examples but they will give you some idea of the variety of ways in which we could utilize various media for independent study.

1. Tapes and disc recordings

    a. foreign language pattern drills
    b. dictation tapes at various speeds for business education
    c. spelling drills
    d. readings of great works of literature
    e. typing drills
    f. directions for exercises in physical education
    g. music appreciation

    In addition, tape recordings can also be used to assist students in improving their own speaking and in listening to lectures of class sessions missed because of absenteeism.

2. Filmstrips and slides

    a. art treasures
    b. step by step procedures for bookkeeping
    c. historical documents
    d. geometric analysis of bridges and other architectural structures
    e. cultural studies in foreign language

3. 8 mm movie films

    Single concept films are short motion pictures showing aspects of a single subject in such a way that they can be used by individual students to illustrate the lesson given by the teacher. These films are silent, so that the teacher can introduce them into his own lesson in his own way in the manner appropriate to that particular occasion.

    Since each film deals only with a single item, it is short in length, lasting only as long as the particular illustration needs and no more -- usually between two and four minutes. These films are used in the form of continuous loops; hence each film may be immediately repeated without delay as often as the individual requires. Cartridge-loading of the projector is so simple that short-length films encourage frequent and ready use. Listed below are some titles of 8mm film loops which might be used in independent study.

a. rotation of the earth
b. solar eclipse
c. a paramecium
d. birth of a caterpillar
e. a Hungarian family at dinner
f. swimming strokes
g. using the jointer safely
h. sculpturing in plastic

4. Programmed learning

Programmed learning perhaps has its greatest potential in the area of independent study. Because it is intended to be used in order to individualize instruction, there is limited value from teaching an entire course by programmed materials. However, if a student is having difficulty in a particular segment of a course or wishes to do enrichment work within that course programs have been and can be written in very specific areas. The following are a few examples of titles of programs which may be presented in book form or through teaching machines:

a. how to read a slide rule
b. rules for capitalization
c. real numbers
d. angles and triangles
e. structure of the legislative branch of government
f. reading a highway map
g. longitude and latitude

SECTION V

Learning Package

WRITING BEHAVIORAL OBJECTIVES

Special recognition goes to Dr. Robert Mager and his book, Preparing Instructional Objectives; Dr. Herb Rite and his WSU associates; Thorwald Esbensen of Duluth Public Schools; Mrs. Alice Duval of Northwest Regional Educational Laboratory; Mr. Roger Turks of Portland Public Schools; and Dr. Jim Monasmith of Central Washington State College. Their materials have been synthesized into this learning package.

AT THE CONCLUSION OF THIS LEARNING PACKAGE, THE LEARNER WILL CORRECTLY AND IN WRITING:

TASK I: (a) Define "Behavioral objectives," and (b) list characteristics of behavioral objectives.

TASK II: Identify action verbs useful to constructing behavioral objectives.

TASK III: Identify component parts of behavioral objectives.

TASK IV: Write behavioral objectives for his field of teaching.

TASK V: Write objectives for own field for cognitive domain of behavior: (a) for lower level of behavior, and (b) for higher levels of behavior.

Note: For more information on writing behavioral objectives, see:

Mager, Robert. Preparing Instructional Objectives.

Vimcet Filmstrips, Nos. 2 and 3. Worksheets are included at end of packet.

TASK I: (a) Define "behavioral objectives," and (b) list characteristics of behavioral objectives.

Step I: Real Esbensen's article, "Writing Instructional Objectives."

Step II: After reading article, write a definition of behavioral objectives which includes the three major characteristics of such objectives.

Step III: Submitt your definition to the staff member in charge.

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WRITING INSTRUCTIONAL OBJECTIVES

Thorwald Esbensen

For many years, educators have talked about the importance of instructional objectives. The purpose of an instructional objective is to make clear to teachers, students, and other interested persons what it is that needs to be taught - or what it is that has been taught.

A well-written instructional objective should say three things:

1. It should say what it is that a student who has mastered the objective will be able to do.
2. It should say under what conditions the student will be able to do this.
3. It should say to what extent the student will be able to do this.

To put the matter in a single sentence, a well-written instructional objective should specify under what conditions and to what extent a certain kind of student performance can be expected to take place.

Performance - conditions - extent: Let us consider --

I. Performance

Performing means doing. A student who performs something does something.

Here are two statements. Which one is expressed in terms of student performance?

A. The student will have a good understanding of the letters of the alphabet, A through Z.

B. The student will be able to pronounce the names of the letters of the alphabet, A through Z.

Statement B tells what it is that the student will be able to do. He will be able to pronounce the names of the letters of the alphabet, A through Z.

Statement A tells us that the student will have a good understanding of the letters of the alphabet. But this is not very clear. We cannot tell what it is that the student is supposed to be able to do as a result of this understanding.

Let's try another pair of statements. Which one is expressed in terms of student performance?

A. The student will have an adequate comprehension of the mechanics of punctuation.

B. Given a sentence containing an error in punctuation, the student will correct the mistake.

Statement B tells what it is that the student will do. He will correct the error in punctuation.

Statement A, which says that the student will have an adequate comprehension of the mechanics of punctuation, is rather cloudy. We cannot tell what it is the student is supposed to be able to do as a result of his comprehension.

At this point, in objection may be raised. Isn't the person who is comprehending something doing something? Isn't intellectual performance an acceptable kind of student performance?

Certainly. The difficulty is that mental activity, as such, is not directly observable. We cannot literally open up a person's head and see the thinking that is going on inside. If it is to be of use to us, a statement of performance must specify some sort of behavior that can be observed.

This does not mean that we are not concerned about intellectual performance. It does mean that since mental activity, as such, is not directly observable, some sort of behavior that is observable will have to stand for or represent the intellectual performance we have in mind.

For example, suppose that we are interested in having students know something about the writing style of Ernest Hemingway. Whatever may be intellectually involved in the attainment of this goal, it should be apparent that the language of our aim as stated leaves much to be desired.

What is the student who knows able to do that the student who does not know is not able to do? This is the important question because, until we have worked out a clear answer to it, we cannot measure the accomplishment of our instructional purpose. Although there is no single answer to the question we have posed (our objective of "knowing something" is too vague for that), here is a possible statement of desired performance: Given ten pairs of short prose passages - each pair having one selection by Ernest Hemingway and one by a different author - the student is able, with at least 90% accuracy, to choose the ten selections written by Hemingway.

Performance - conditions - extent: Let us now consider --

II. Conditions

Here is one of our earlier statements concerning the alphabet: The student will be able to pronounce the names of the letters of the alphabet, A through Z. We have said that this statement is expressed in terms of student performance. Does this statement also set forth the conditions under which the performance is to take place?

No, it does not. For one thing, we cannot tell from our statement whether the student is to pronounce the names of the letters at sight or from memory. If the letters are to be shown, we do not know whether the student is to work with capital letters, small letters, or both. Nor do we know whether the student is to work with these letters in regular sequence or in random order. Obviously, each set of conditions is substantially different from the rest, and will make its own special demands upon the student who attempts to accomplish the objective.

Let's examine two more statements. Which one sets forth the conditions under which a certain kind of performance is to take place?

A. Given the Dolch list of the 95 most common nouns, the student will be able to pronounce correctly all the words on his list.

B. The student will be able to pronounce correctly at least 90% of all words found in most beginning reading books.

Statement A, which tells us that the Dolch list of the 95 most common nouns will be used, sets the conditions for the demonstration of student mastery. We are told that these particular words, and no others, are the ones at issue for this objective.

Statement B, offering us only the dubious clue of "words found in most beginning reading books" does not tell us enough. Our conditions need to be defined more precisely than this.

We have come now to the matter of the extent and level of performance. A well-written instructional objective will establish an acceptable minimum standard of achievement.

Look at this objective: Given twenty sentences containing both common and proper nouns, the student will be able to identify with very few mistakes both kinds of nouns. Does this objective establish a minimum standard of achievement?

No, it does not. The way that the student is to perform "with very few mistakes" leaves open the question. How many mistakes are only a very few?

Here is the Hemingway objective we looked at earlier: Given ten pairs of short prose passages - each pair having one selection by Ernest Hemingway and one by a different author - the student is able with at least 90% accuracy, to choose the ten selections written by Hemingway. Does this objective establish a minimum standard of achievement?

Yes, it does. The student is expected to be able, "with at least 90% accuracy, to choose the ten selections written by Hemingway." This constitutes a minimum standard of achievement.

Let's try one more objective: The student should be able to pronounce from memory, and in sequence, the names of the letters of the alphabet, A through Z.

Does this objective establish a minimum standard of achievement?

Yes, it does. The objective implies that we are looking for 100% mastery. However, we could, if we want to be explicit, re-state our objective in this way: The student should be able to pronounce from memory, in sequence, and with 100% accuracy, the names of the letters of the alphabet, A through Z.

An instructional objective should not ordinarily be limited to specific means (particular materials or methods), but should be stated in terms that permit the use of various procedures. Look at this statement of an objective: Given the California Test Bureau's B-F level programmed booklet on capitalization, the student is able to work through the exercises in this booklet with at least 90% accuracy. Is this objective limited to the use of a particular instructional item or procedure?

Yes, it is. The objective is expressed exclusively in terms of performance with a specific booklet. Although the particular kind of skill development that is promoted by this booklet is presumably also fostered by other instructional materials and methods, no such options are available under the terms of our objective as it is now written.

Look at this statement of an objective: Given twenty sentences containing a variety of mistakes in capitalization, the student is able, with at least 90% accuracy, to identify and re-write correctly each word that has a mistake in capitalization. Is this objective limited to the use of a particular instructional item or procedure?

No, it is not. The objective, as now stated, permits us to use a number of instructional items that show promise in being able to help students attain the desired performance. Among these items are not only the California Tests Bureau's B-F level material, but the somewhat simpler C-D level presentation, a programmed booklet by D. C. Heath, Unit II of English 2200, Unit 9 of English 2600, Lessons 87 and 88 of English 3200, several filmstrips on capital letters, and so on.

III. Extent

Finally, a well-written instructional objective will suggest how its accomplishment can be measured. This follows from our view that a well-written objective specifies under what conditions and to what extent a certain kind of student performance can be expected to take place.

Look at this objective: the student should know the alphabet. Does this objective suggest how its accomplishment can be measured?

No, it does not. The reason for this is that knowing the alphabet can mean different things to different people. Therefore, depending upon what is meant, the measuring of this knowing will take different forms.

Suppose we elaborate upon our objective so that it reads: Shown the letters of the alphabet in random order in both upper and lower case form), the student is able to say the name of each letter with 100& accuracy. Does our objective now suggest how its accomplishment be measured?

Yes, it does. It tells us that the student will be shown the letters of the alphabet, that he will be shown these letters in both upper and lower case form and in random order, and that he will be called upon to say with 100% accuracy the name of eahc letter shown. The objective, in other words, makes it plain how its accomplishment can be measured.

If teachers at all levels of schooling would be this explicit in writing instructional objectives, they might reasonably hope to eliminate almost immediately one cause of learning failure among students: the traditional fuzziness of classroom assignments.

TASK I: Identify action verbs useful to constructing behavioral objectives.

Step I: Read attached excerpt, Page 8, from Mager's *Preparing Instructional Objectives* dealing with the use of action verbs in preparing instructional objectives.

Step II: Using the answer sheet on Page 10, "Word Exercise," place verbs in appropriate columns.

Step III: Check your answers with answer sheet at end of packet, Page 17. If you missed three or more, view Vimcet #2, and proceed to Step IV.

Step IV: Obtain new word exercises from instructor and re-accomplish.

Step V: Check answers with answer sheet.

PREPARING INSTRUCTIONAL OBJECTIVES

-The Qualities of Meaningful Objectives-

We already know that a statement of an objective describes a desired state in the learner. We also know that we have successfully achieved our objective when the learner can demonstrate his arrival at this state. But how do we write the objective to maximize the probability of our achieving it? What are the characteristics of a meaningfully stated objective?

Basically, a meaningfully stated objective is one that succeeds in communicating to the reader the writer's instructional intent. It is meaningful to the extent it conveys to others a pciture (of what a successful learner will be like) identical to the picture the writer has in mind. Since a statement of an objective is a collection of words and symbols, it is clear that various combinations may be used to express a given intent. What we are searching for is that group of words and symbols which will communicate your intent exactly as YOU understand it. For example, if you provide another teacher with an objective, and he then teaches his students to perform in a manner which you agree is consistent with what you had in mind, then you have communicated your objective in a menaingful manner. If, on the other hand, you do not agree that these learners are able to perform according to your intentions, if you feel that you "had something more in mind" or that your intent was "misinterpreted," then your statement has failed to communicate adequately.

A meaningfully stated objective, then, is one that succeeds in communicating your intent; the best statement is the one that excludes the greatest number of possible alternatives to your goal. Unfortunately, there are many "loaded" words, words open to a wide range of interpretation. To the extent that we use ONLY such words, we leave ourselves open to misinterpretation.

Consider the following examples of words in this light.

Words Open to Many Interpretations	Words Open to Fewer Interpretations
to know	to write
to understand	to recite
to really understand	to identify
to appreciate	to differentiate
to fully appreciate	to solve
to grasp the significance of	to construct
to enjoy	to list
to believe	to compare
to have faith in	to contrast

What do we mean when we say we want a learner to "know" something? Do we mean that we want him to be able to recite, or to solve, or to construct? Just to tell him we want him to "know" tells him little--the word can mean many things.

Though it is all right to include such words as "understand" and "appreciate" in a statement of an objective, the statement is not explicit enough to be useful until it indicates how you intend to sample the "understanding" and "appreciating." Until you describe what the learner will be DOING when demonstrating that he "understands" or "appreciates," you have described very little at all. Thus, the statement which communicates best will be one which describes the terminal behavior of the learner well enough to preclude misinterpretation.

WORD EXERCISE

to recite
to name
to describe
to know
to write
to identify
to understand
to really understand
to differentiate
to appreciate
to solve
to demonstrate
to construct
to fully appreciate
to grasp the significance of
to enjoy
to list
to compare
to believe
to have faith in
to contrast
to state a rule
to apply a rule

Words Open to Many Interpretations	Words Open to Fewer Interpretations
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.
11.	11.
12.	12.
13.	13.
14.	14.

TASK III: Identify component parts of behavioral objectives.

Step I: Review Esbensen excerpt, if desired.

Step II: Using list of instructional objectives on Page 12, identify in writing the component parts of each objective in the space provided.

Step III: Check answers with answer sheet provided on Page 19. If you miss one component or more, view Vimcet #2. If not, proceed to Step IV.

Step IV: Complete criterion task for TASK III. Submit to the instructor for evaluation.

INSTRUCTIONAL OBJECTIVES

1. The student will write an essay on state government which exhibits no grammatical errors.

Performance:

Condition :

Extent :

2. Given a list of ten actual municipal court decisions, the student will select the six which violate key tenets of the Constitution.

Performance:

Condition :

Extent :

3. The student will orally recite from memory the names of six chemical compounds containing three or more elements.

Performance:

Condition :

Extent :

4. Students will name, in writing, the date when women were first permitted to vote.

Performance:

Condition :

Extent :

5. Given the names of well-known novels and names of contemporary authors the student will correctly match them in a test with 100% accuracy.

Performance:

Condition :

Extent :

CRITERION TASK FOR TASK III

1. Each student will thread a Singer sewing machine correctly.

   Performance:

   Condition :

   Extent :

2. When presented with a list of nouns and pronouns, the student will label each word correctly.

   Performance:

   Condition :

   Extent :

3. Students will write from memory the name of each of the justices of the Supreme Court.

   Performance:

   Condition :

   Extent :

4. Given the Dolch list of the ninety-five most common nouns, the student will be able to pronounce correctly all the words on this list.

   Performance:

   Condition :

   Extent :

5. The subject should be able to pronounce from memory, and in sequence, the names of the letters of the alphabet, A through Z.

   Performance:

   Condition :

   Extent :

6. Students will correctly answer in writing ten out of twelve multiple-choice questions on the Roman Empire.

   Performance:

   Condition :

   Extent :

7. Given a list of ten countries, the student will identify in writing five countries that border on an ocean.

   Performance:

   Condition :

   Extent :

8. The student will correctly solve nine of the ten story problems presented.

   Performance:

   Condition :

   Extent :

9. The student will list and describe the themes of four of Shelley's poems.

   Performance:

   Condition :

   Extent :

10. The student will list three major causes of the Civil War.

    Performance:

    Condition :

    Extent :

TASK IV: Write behavioral objectives for his field of teaching.

Step I: Write correctly five behavioral objectives for learning activities appropriate to your field of teaching. Curriculum guides and textbooks may be used as sources of objectives.

Step II: Submit to your instructor for evaluation.

TASK V: Write objectives for own field for cognitive domain of behavior: (a) for lower level of behavior, and (b) for higher levels of behavior.

Step I: View Vimcet #3, "Selecting Appropriate Educational Objectives," completing and checking the answer sheet while viewing.

Step II: Write five objectives at "lowest level" and five objectives at "higher levels."

Step III: Submit completed objectives to your instructor.

WORD EXERCISE (Answer Sheet)

Words Open to Many Interpretations	Words Open to Fewer Interpretations
1. to know	1. to recite
2. to understand	2. to name
3. to really understand	3. to describe
4. to appreciate	4. to write
5. to fully appreciate	5. to identify
6. to grasp the significance of	6. to differentiate
7. to enjoy	7. to solve
8. to believe	8. to demonstrate
9. to have faith in	9. to construct
	10. to list
	11. to compare
	12. to contrast
	13. to state a rule
	14. to apply a rule

3

Worksheet for Vimcet #2

EDUCATIONAL OBJECTIVES

1. yes no
2. yes no
3. yes no
4. A B
5. A B C D
6. A B C D
7. A B
8. A B
9. A B
10. A B
11. A B
12. yes no

Modified Objectives (one) ________________________________

____

____

Modified Objective (two) ________________________________

____

____

Modified Objective (three) ________________________________

____

____

INSTRUCTIONAL OBJECTIVE: (Answer Sheet)

1. Performance: will write essay

Condition : state government

Extent : no grammatical errors

2. Performance: will select

Condition : from list of ten actual municipal court decisions

Extent : six

3. Performance: recite

Condition : orally, from memory

Extent : six

4. Performance: will name

Condition : in writing

Extent : must name the date

5. Performance: will match

Condition : given the names of well-known novels and names of contemporary authors; test situation

Extent : 100% accuracy

SECTION VI

UTILIZATION

of

TEACHING STRATEGIES

Eastern Washington State College

Cheney, Washington

INTRODUCTION:

The planning of a lesson is a complex process. A planned lesson is where the student has been moved into a position where the teacher is able to account for what is being taught and learned by the student. Usually in planning a lesson a teacher will first describe the learning outcomes of the student. The package on instructional objectives refers to three areas of learning: cognitive, affective, and psychomotor. The most common is the cognitive domain which deals with the manipulation and restatement of knowledge. The affective focuses on expressions of the learners' attitudes, values and feelings; and the psychomotor domain describes learning outcomes which involve physical movement or a combination of movements.

The decision about which domain the student encounters is influenced by the overall goals the teacher has. One notion that does stand out is that the affective domain permeates all instruction and should be referenced with objectives in each lesson. Objectives in the other domains - cognitive and psychomotor - will be included only as they relate to the content and skills of the course. After the teacher decides on the outcomes of the lesson, it is usually appropriate to raise questions about the learner's prerequisite learning - these prior learnings necessary to attain the objective. It is obvious that no matter how precisely the learning outcomes (objectives) are described if the student is not ready cognitively, affectively or from a psychomotor point of view then he will not be successful.

Once the questions about what the student is to learn and do have been answered, the teacher is ready to make decisions about the strategies to be utilized.

The selection of the appropriate strategy is influenced by a number of factors, including the following:

- a. objectives and goals
- b. student skills already possessed
- c. environment
    - i. time
    - ii. space
    - iii. materials and equipment
- d. psychological impact
    - i. teacher dominance
    - ii. student energy

In planning to utilize a strategy the teacher must be sure that the strategy will permit and facilitate the learnings proposed and also be cognizant of how much time it will take for students to attain an objective using a strategy. The question that continually haunts the teacher is whether or not there is a quicker way to get the job done. Space considerations also tend to constrain the teacher. Some classrooms, because of size, will not permit the instructional variety that might be seen in other rooms.

The last factor focuses on the material and equipment that must be available for a strategy to be implemented. It is always painful for a teacher to limit the span of her strategy utilization because of inadequate or insufficient materials or equipment, but far too frequently the quality of instruction provided for students has undue budgetary limitations.

The following schematic illustrates the relationship between objectives, student background, and strategy utilization.

Psychological Impact
1. Teacher Dominance
2. Student Energy

GOALS

Objectives	Student	Teachers understanding of the capabilities of student strategies	Environment
Affective Psycho Cognitive	Background		1. Time 2. Space 3. Materials 4. Equipment

As is noted in the illustration, variable use of instructional strategies is predicated upon the teacher's understanding of the capabilities of each system. This understanding should include the ability to describe what the teacher does, and what the student does as the system unfolds and also how the system is sequenced.

To check your understanding of these three dimensions a keyed learning experience has been provided.

TASK I:

A way to check if you have the necessary information and understandings to complete and benefit from this packet has been provided in Task I. Fill in, as best you can, the chart given below:

When you finish, check your ideas with the ideas given in the key. If the discrepancy is great, and be honest now, it would help you to experience the learning activity packages describing various strategies.

METHOD	TEACHER ROLE	STUDENT ROLE	SEQUENCE OF TEACHER ACTIONS
Small - group			
Large group			
One to One			
Independent Study			

Be sure to check your ideas with the ideas in the key on page 3.

If there is considerable difference between the principles on your chart and the principles on the key, it might be wise to backtrack to the packages of materials which describe instructional strategies or possibly read about methods in a text.

TASK II:

The methods that this package explores include:

1. lecture
2. question-answer
3. discussion
4. small group
5. individual study
6. demonstration
7. laboratory work
8. test
9. movie
10. pupil report
11. seat work
12. guest speaker
13. role playing
14. socio drama
15. panels - student
16. field trips

In the introduction, time, space, equipment, and materials were noted as prime factors in strategy selection. There are other considerations besides environmental constraints which influence the selection of a method. One of the most important is the power relationship between the teacher and the student. Some methods are or can be dominated totally by the teacher, other methods demand that the teacher relinquish some of his dominance to the students. A cause of great frustration for teachers and students occurs when they don't understand their respective roles pertaining to different methods employed in the classroom. A second source of frustration develops when a teacher employs one method, tries another, but forgets to change his "power" and enjoys no learner success because the students typically are "reading" the teacher and gauging their behavior by his. Students respond to the stimulation provided by the teacher. If the teacher calls for a controlled non-creative environment by his actions, the students usually comply. If the teacher calls for a more open relationship, the students usually strive to meet his expectations.

A second factor in looking at the power relationship between teachers and students focuses on the readiness of students to assume more dominance in the classroom. The readiness of the students is influenced most directly by the level and intensity of classroom conditioning that has been used by present and past teachers. Intellectual maturity is frequently advanced as a prime factor in determining which strategies will work. There is an abundance of evidence that very young children with appropriate readiness activities can manage a considerable portion of their learning with minimal teacher dominance. Maturity of the students as criteria for strategy selection is of minimal importance.

The thrust of this package is to encourage teachers to provide learning sequences which have varying levels of teacher dominance. No teacher should use the same strategies day after day. What creates many of the discipline and motivational problems for the teacher is the overuse of any one method. Any single method which is used with great frequency tends to restrict learning.

In all activities used in the classroom there will be varying levels of teacher involvement - teacher domination. Some demand the teacher to be the total "show," others ask the teacher to come down from the podium and take a less prominant leadership role. Dominance then, is how much power the teacher uses or has to use to develop the strategy. To facilitate your understanding of the power the teacher has in each method draw a number line from 1 to 10, as shown below, refer to the methods illustrated in Task II and place them in their appropriate location on the line. More than one strategy can occupy the same space.

1 2 3 4 5 6 7 8 9 10

Teacher has almost all power

Teacher has almost no power

A key is given in the next page for you to use in checking your answers. They represent a consensus and should not be thought of as absolute.

KEY: TASK II

1	2	3	4	5	6	7	8	9	10
	9			16		4		14	
	8			3		15		13	
	2			11		10		7	5
	6								
	12								
	1								

Teacher
Dominance

Limited
Teacher Dominance

Remember, these answers represent a consensus of others doing the same task.

TASK III:

Another dimension of selecting an activity has to do with the physical and intellectual energy required to complete that activity. In the lecture mode the learner is asked for little intellectual energy. It is basically a passive activity. The students sit, immobilized, passively encountering the teacher and the content being talked about.

The lecture mode, because it demands low energy output, is a passive learning activity. Active learning experience, like small group work, demands high energy outputs.

The consideration of how much intellectual energy the student puts into an activity is crucial when several strategies are used in sequence. Most teachers in the elementary schools are quick to relate to you the length of time that a student's attention can be held. In looking at the arrangement of the total instructional program for a given day, it can be seen that many energy consuming tasks are completed in the morning and those that require less intellectual energy are held in the afternoon. In looking at the format of the day's learning experiences provided in these classrooms it can be seen that the level of energy expenditure is not constant. In fact, the teacher usually follows very demanding intellectual tasks with activities that are restful and require little output on the part of the student. Usually high energy output activities should be coupled with low energy output activities. Thus, providing the student with a chance to "recharge" those "learning cells."

To help build an awareness of the energy used in each method, draw a number line 1=10 end. Take the same 16 learning strategies and place them on it. As with the preceding task, the answers given in the key represent the concensus of the jury. Also remember that it is possible to place more than one strategy in a slot.

1. Question/Answer
2. Discussion
3. Lecture
4. Small Group
5. Individual Work
6. Demonstration
7. Laboratory Work
8. Test
9. Movie
10. Pupil Report
11. Seat Work
12. Guest Speaker
13. Role Playing
14. Socio Drama
15. Panels - students
16. Field Trips

1 2 3 4 5 6 7 8 9 10

Require Most
Student Energy

Require Least
Student Energy

KEY: TAST III

1	10			8	16		13		
12	15			2	3	4	14	7	5
9									
6									
1	2	3	4	5	6	7	8	9	10

These answers represent a consensus of the jury.

TASK IV:

Another perspective that needs examining in critiquing an instrumental sequence relates to the residual effect that a method has on the learner. Everyone has been in classes where teachers have lectured for a long period of time (20-40 minutes). To close the hour, the teacher often wants to have a class discussion. Often the discussion is not successful because the residual effects of the lecture (passive, low energy, high teacher dominance) will not permit quick entry into high energy learning experiences. The inability of the students to make this transition in a short period of time often frustrates the teacher and creates a self-fulfilling prophesy where the teacher concludes inability of students to discuss--cites the poor quality of students, and then just lectures the whole hour instead of the usual 40 minutes to save himself from the anguish of trying to discuss when the students will not. The tragedy here is that because of the teacher's inability to understand the impact of lecture on the students, he is being trapped into an instructional mold. He believes that the lack of student participation in the discussion is a defect in their abilities when the real cause for their lack of participation is the teacher. The teacher did not realize that the lulling effect of the lecture would be carried into the next activity. The students were not able to move because of the "set" created by the teacher through the use of the lecture method.

The lecture-discussion relationship is not only one where the residual effect of one method is carried to the other.

Question: 1. In your trios, produce at least three other pairings where energy of the first activity is carried to the second.

2. In your trios, produce a list of at least three things a teacher can do to help break the "set" created by the first activity.

Presented here is a summary by Clifford Gillies of a study done by Martin N. Olson of Columbia University. The study examined indicators of quality as perceived by over 4,000 students. The study is reported in its entirety in the Association of Public School Systems Bulletin, Vol. 22, No. 5. January, 1971.

RESULTS OF INDICATORS OF QUALITY (JAN. 1971)
STYLE OF EDUCATIONAL ACTIVITY
SECONDARY OBSERVATIONS

STYLE OF ACTIVITY	SUBJECT MATTER SCORING MEANS										
	ENGLISH LIT.	ENGLISH COMP.	MATH	HISTORY	SCIENCE	FOREIGN LANG.	HOME EC.	VOC./ IA	ART	COMM.	MUSIC
(1) QUEST/ANSWER	3.51	3.84	4.11	3.31	3.79	3.42	7.85	3.72	____	-0.06	____
(3) DISCUSSION	9.29	6.73	5.76	7.72	4.44	7.00	7.63	4.00	____	4.36	2.83
(5) LECTURE	1.08	.93	1.27	.50	1.23	1.17	5.50	1.88	-0.68	-0.44	----
(9) SMALL GROUP	11.04	10.12	6.00	13.22	9.76	9.50	11.79	13.23	11.00	-----	13.50
(2) INDIV. WORK	5.75	5.46	8.46	2.89	8.98	7.18	11.25	10.70	11.21	5.16	----
(9) DEMONSTRATION	7.50	----	4.50	----	6.72	3.65	8.58	8.00	----	3.90	2.07
(8) LAB. WORK	----	----	----	----	9.91	2.83	10.33	9.11	7.79	3.64	6.07
(7) TEST	.98	.24	.61	-0.20	1.78	1.83	4.41	1.50	----	1.74	----
(11) MOVIE	.27	----	----	.79	.37	3.96	5.10	----	----	-----	-----
(12) PUPIL REPORT	6.37	6.07	----	7.21	8.17	8.41	8.50	----	----	-----	----
(3) SEAT WORK	.13	2.72	2.79	-0.13	.46	.96	8.64	3.35	6.53	2.52	----
MEAN	4.76	3.80	3.84	2.88	4.52	3.61	9.12	8.60	9.77	2.63	3.71

The inclusion of this data hopefully will raise questions similar to the following items which should now be discussed in your trios.

1. Why the low marks for the lecture and seat work methods?
2. Which methods received the highest ratings? Why?
3. Why do some teaching areas enjoy higher ratings in all methods than others?

TASK V:

Where are you now?

Thus far in this package you have explored several intellectual considerations in selecting a method: The amount of teacher control (dominance), the energy output of students (active vs. passive learning); and finally, the quality of a method as perceived by the students.

(a) To help firm these ideas in your mind, make a list of the methods you used in the last day or two. Keep them in the order in which they were used. Evaluate them from the dominance perspective and the energy perspective.

   i. Did you have two or more T-dominated activities in succession? Why?

   ii. Did you have two or more student high energy output activities sequenced together? Why?

   iii. If you were to assign the ratings given by students to each method, what would your score be?

(b) In your trios, revamp each list of methods so as to provide the most variability in Teacher-dominance and student energy an also maximize the persons "quality" score.

TASK VI:

Thus far the package has focused on several intellectual and philosophical criteria that can be used in selecting instructional strategies. There are environmental considerations that are equally as prominent. These factors include time, space, and size of class.

In Task III reference was made to the placement of an activity, and it was noted that coupling certain methods might produce "lags" in student productivity. If the student is not ready for the method, there is no way a teacher can wish production from the learners.

The time needed to complete an activity is difficult to measure because expression of the variables between classrooms will not be constant. What one group can get done in a certain length will not be a valid predictor of what another group can do. In most lessons a rule of thumb for the application of any strategy would be 10 to 15 minutes. If the teacher has the activity planned, the task can be accomplished within that time frame. Frequently, additional time is used in the transitions before and after the use of the method. A teacher needs to be wary of using more time than needed in these transition periods. Once the time interval for the strategy has been determined, the teacher needs to look at the means to get the students to move in and out of the method using the least amount of time.

Several method couplings are listed. In your trio prepare ways to reduce the "shock" of the next activity. On sets A and B specific events are described in each transition. As individuals and then in trios describe how students can be moved easily from one activity to another in examples C and D.

A.	Activity #1	Transition	Activity #2
	QUESTION/ANSWER		DISCUSSION

Key Teacher summarizes questions and writes several questions on the board to focus the discussion.

B.	Activity #1	Transition	Activity #2
	ROLE PLAYING		DISCUSSION

Key Have students describe the feelings of the characters in role playing activities.

C.	Activity #1	Transition	Activity #2
	LECTURE		SMALL GROUP

D.	Activity #1	Transition	Activity #2
	MOVIE		SMALL GROUP

Questions to be answered first by individuals then checked in trios.

1. What is the relationship between the activities used in transition and the major methods in the lesson?
2. Should the transition activity be closer to Activity #1 or Activity #2? Why?

TASK VII

Frequently the range of strategies used in a classroom is restricted by a combination of furniture and floor space. Other considerations such as accoustical treatment or lack of it, tend to present very real problems with respect to providing variable use of instructional strategies. There are times when teachers use their facilities as a means to rationalize poor instruction. Far too often the teacher shields his poor performance with the plea of poor facilities when in fact the real reason is ignorance or laziness! All classrooms have some restrictions or limitations--the sound carries too far or not far enough; desks too big, too little, square, round, etc. It is not hard to find something in any classroom that may restrict the teacher's repertoire of methods. There are also things in your buildings that help strategy utilization. Sometimes these helps are seen by one person but not another.

Complete the following items:

1. On the next activity list the three or four most frequently used methods in your classroom. With each method, write down those factors that help the method and those factors that hinder the application of the method. Rank order the helps and hinderances. Assign #1 to the most important help; #2 to the second most important and so on. Do the same with hinderances.

Example A: Method: Small Group

Helps Hinderances

Method 1 ____________________

Helps Hinderances

Method 2 ____________________

Helps Hinderances

Method 3 ____________________

Helps Hinderances

Method 4 ________________

Helps Hinderances

2. Compare your analysis with the other members of your trio.
3. In this comparison look for elements that are common to all 3 or 4 methods on the help column. In your trio, prepare ways to increase the items that are helpful.
4. Which elements are common on the hinderance column? In groups prepare ways to reduce the hinderances.
5. Now as individuals take the remaining strategies included in this package (listed in Task II) and evaluate their potential use in your classroom. The potential of each method should be accompanied by an analysis showing in rank order the helps and hinderances you perceive in that method's application.
6. Share your assessment with the other members of the trio. Help the members of the trio find reality as to the potential of each method.

Questions:

1. What are ways some of the hinderances can be reduced?
2. What are ways to increase those helps that you were able to recognize?

TASK VIII:

One of the most common concerns of teachers is the number of students they have the responsibility to teach. Bruce M. Mitchell[1] notes in an article published in the Peabody Journal of Education that many of the beliefs about the effects of class size on academic achievement, pupil morale, teacher morale, student social adjustment and strategy selection are for the most part myths.

Gillis in abstracting Olson's[2] study of Indications of Quality produced the following tables.

1. In your trios, determine the level of quality of instruction you are providing by noting the subject area, the strategy used and the class size.

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[1] Small Class Size: A Panacea for Education Ills? Bruce Mitchell, Peabody Journal of Education, July, 1969.

[2] "Know How", Assoc. Pub. Sch. Systems, Morten N. Olson, Vol. 22, No. 5, January, 1971.

Cliff Gillis, Principal, Mariner High School, Mukilteo School District, Washington.

I. of Q.

CLASS SIZE & SUBJECTS

CLASS SIZE	ENG. LIT.	ENG. COMP.	MATH	HIST.	SCI.	FOR.L.	HOME EC.	VOC/IA	ART	COMM.
UNDER 5		8.32				6.93				2.64
5-10	6.97		7.35	4.70	10.23	7.41	10.83	9.89	13.15	6.18
11-15	5.63	4.42	4.94	4.15	5.42	4.94	9.54	9.05	9.84	4.81
16-20	5.69	3.55	2.85	2.40	3.46	2.99	9.30	8.19	10.39	2.79
21-25	4.21	3.61	4.17	3.17	4.45	2.69	7.29	7.70	8.69	1.36
26-30	4.87	3.24	3.38	2.89	3.75	1.72	5.81	3.50	9.33	1.62
31-35	1.61	2.39	2.62	1.54	5.00	5.50			5.50	0.22
36-40			2.30	4.00						-0.90
41-50				0.17						
51				-0.82						

I. of Q. (Jan. 1971)

OBSERVATIONS OF SECONDARY

SIZE OF CLASS	SMALL GROUP	INDIV. WORK	LAB. WORK	DISCUSS	DEMON.	Q & A	SEAT WORK	TEST	LECTURE	PUPIL REPORTS
Under 5		10.62	10.85			9.50	5.50			
5-10	11.36	11.03	11.50	9.66	7.63	7.47	4.27	4.45	3.33	
11-15	11.37	9.77	8.96	7.69	7.14	5.38	3.77	3.16	0.11	10.23
16-20	9.94	9.04	8.37	7.83	6.29	2.37	1.90	1.77	1.58	8.22
21-25	9.93	7.68	8.24	7.28	5.98	3.57	1.79	0.10	1.11	6.48
26-30	8.63	6.54	6.71	7.46	4.94	3.85	1.51	0.55	1.45	6.42
31-55	10.69	6.13	8.24	6.58	2.57	1.59	- 0.05	-0.09	0.93	
36-40	9.50	7.65	N.O.	N.O.	0.14	5.69	0.77		- 4.90	
								1.00		
41-50	6.83	7.50	N.O.	N.O.	2.83		- 1.70		0.93	
50	6.10	4.25	N.O.	N.O.	1.06		3.10	1.81	- 1.17	
Mean	9.80	8.76	8.42	7.63	5.60	3.69	2.17	1.16	1.09	7.50

TASK IX:

You have been exposed to a number of ideas on the selecting and utilization of strategies. The test of any learning packet rests with the teacher's application. To facilitate your use of these ideas, the following activities are suggested.

1. Take one content area and outline it for a period of time covering about ten instructional periods.
2. In your trios, select the strategies that will have the greatest impact on the learners. Keep in mind the student energy, teacher dominance, transition and the effect on learners.
3. Get a sheet of butcher paper large enough to display your ideas. Use the chart design given below.

Outline of Content	Activities or Strategies	Level of Teacher Dominance	Level of Student Energy	Student Gains
I.	Small Group	Medium/low	high	1.
a.				2
b.	Transition			3.
II.	Pupil Project	Low	Medium/ high	1.
a.				2.
b.	Transition			
c.				1.
III.				1.
				2.

4. Put your chart up and explain it and your reasoning to the other trios.

SUGGESTED UNIPAC FORMAT

The following pages contain a suggested format for the construction of a UNIPAC. When the print is in this type face, the material is to be included in the UNIPAC. If the print is in *this type face, the material is presented as explanation for the benefit of the person producing the UNIPAC and is not written into the UNIPAC.*

The green paper indicates those sheets which constitute the TEACHER'S SECTION. Although they are split here for purposes of constructing a UNIPAC, they would actually be all together and make up the front section of your UNIPAC as indicated by the page numbers.

UNIPACS SUBMITTED FOR THE "BANK" MUST BE CLEARLY TYPED (ORIGINAL PREFERRED) WITH PICA OR LARGER TYPE IF POSSIBLE.

IDENTIFICATION PAGE

Title: *This should be an attention getter; it does not have to be the same as the idea, skill, or attitude.*

Subject:
Give the general area of the curriculum where the UNIPAC could best be used; i.e., Science, Social Studies, Humanities, Business Education, P.E., etc.

Performance Level:
Give the general level for which the UNIPAC was designed; i.e., Primary, Intermediate, Middle, Secondary, or Adult. While the UNIPAC may have been designed for one specific learner, it probably has wider applicability. Any special requirements or unique pupil performance that is needed should be indicated.

Purpose:
This explanation should include the needs of the learner the producer had in mind at the time of production. It should also explain whether the UNIPAC relates directly to a course of study, is for independent study, or is a quest type activity.

Producer(s):
Give the name(s) of those who were involved in the production of the UNIPAC. Do not list those who assisted as consultants.

Address:
Give a complete address, including zip code, where the producer(s) may be contacted. Home addresses are preferred as contacts may need to be made at times when schools are not in session, or if teaching assignments change. If there were several producers, the first name listed should be designated as the person to contact.

Production Consultant:
This should be the name of the consultant who worked with the producer(s) at a workshop, seminar, college course, or by correspondence.

Date Submitted:
Give the date the UNIPAC was sent to the Materials Center.

Date of Local Field Testing:
Provide the date of testing by the producer(s) in their local situation. If no testing with learners was accomplished, it should be so indicated.

Field Testing Results:
Provide a short subjective report of the results of the field testing with a description of the user(s) and the conditions under which the sampling was obtained.

Date of Acceptance:
This space is left blank. The Materials Center will provide this date after processing the UNIPAC.

If the discovery approach is used, this page would NOT be included as the first page of the Student's Section. However, if it is included, it would have to be simplified for some levels of ability.

I. Statement of Idea, Skill, or Attitude

A. Major Idea, Skill, or Attitude to be learned.

This should be a specific statement of the idea, skill, or attitude to be learned. One sentence usually is sufficient.

B. Component Ideas, Skills, or Attitudes

1.

2.

3.

A component is an essential element which, when united with other components, further identifies the major idea, skill, or attitude to be learned.

List as many components as are required to support the main idea, skill, or attitude. Usually there are at least two components, but not usually more than five or six.

II. Learning Objectives

A.

B.

C.

D.

The learning objectives should be stated in behavioral terms and usually contain three elements:

1. *The performance expected of the learner*
2. *The conditions under which the performance will take place*
3. *The proficiency level expected of the learner*

The number of objectives is determined by the producer. Usually, there will be at least one objective for each component idea, skill, or attitude to be learned.

ii *(This is the page number for the teacher's section; if it is placed in the student's section, a different number would be used.)*

This is the cover sheet for the Student's Section

THIS SECTION FOR STUDENT USE

____

(title)

PRE-TEST

(or POST-TEST, the format is the same)

Purpose of the Pre-Test *(or Post-Test)*

Explain to the learner why he is taking the pre- or post-test. The learner should be made aware of the relationship between this evaluation instrument and the Learning Objectives. In the case of the pre-test, he should be encouraged to view the test as a method of gathering information about how he is to proceed through the UNIPAC, not as an instrument to be graded or one that is PASS-FAIL.

Instructions

This must be specific. It tells the learner exactly how to proceed, what functions he must perform, whether to score the test himself, (if so, tell him the location of the key) or if he should consult with his teacher about the results.

BODY OF THE TEST

The pre- or post-test should measure achievement of the learning objectives and allow for determination of the extent to which the student understands the major and/or component ideas, skills, or attitudes to be learned.

The usual format for a pre-test would evaluate all the component parts. However, another suggested format is to construct the pre-test in sections so that a correlation between the component idea, skill, or attitude, the associated learning objective and the specific part of the pre-test can be determined. It may be designed to allow the learner and/or the teacher to select only those lessons that require the learner's time. If the learner has already achieved an objective, that part of the UNIPAC could be ignored.

IN SOME UNIPACS THE PRE- AND POST-TESTS ARE THE SAME, BUT USUALLY THEY MEASURE THE SAME THINGS USING DIFFERENT TEST INGREDIENTS.

The keys to the pre- and post-tests are usually contained in the teacher's section.

THE PRE-TEST IS THE SECOND PAGE OF THE STUDENT'S SECTION. THE POST-TEST IS USUALLY STORED IN THE TEACHER'S SECTION.

LESSON(S)

Number them according to need; usually, there is a lesson for each component.

Component:

The specific component idea, skill, or attitude selected as the central theme of this lesson would be stated for the learner. Depending on the learner's ability level, the statement may or may not be a repeat of what was expressed in the teacher's section.

Objective:

The specific learning objective(s) to match the component as stated above would be presented. Student ability level considerations apply as above.

Instructions:

Be specific, indicate exactly what the learner is to do. If there are resources or equipment he needs before he proceeds, tell him what is needed and suggest how he might proceed to acquire them.

The learner may not need to do every learning activity suggested, or he may be required to do some activities, while other activities would be optional alternatives from which he may choose based on what he and/or the teacher feel will help him achieve the learning objectives(s).

Learning Activities:

If the information to be presented is originated by the producer(s) of the UNIPAC, it would be presented here. If outside resources are also relied upon, there should be some introductory explanation setting the stage for what will be received from such outside sources.

Diversified learning activities should be listed as either additional activities, primary activities, or supplementary activities. (See explanation under Instructions above)

Materials:	*For example - textbooks, periodicals, programmed texts, pamphlets, etc.*
Media:	*For example - films, filmstrips, records, tape recordings, 8 mm single concept loops, video tape recordings, study prints, etc.*
Methodology:	*For example - large group where media is used, small group, teacher-pupil conference, research in the learning resource center, etc.*

Self-Evaluation:

This can be an activity, an experiment, an exercise, or questions to be answered. Some method of self checking should be provided.

If the producer desires, the self-evaluation can be combined for two lessons. In that case, the self-evaluation would be at the conclusion of the second lesson.

QUEST OPPORTUNITIES

Suggestions should be made to provide guidance for those students who desire to continue exploration of the idea, skill, or attitude to be learned which was the subject of this UNIPAC. Items listed should be presented as SUGGESTIONS, and should be worded to indicate they are.

The final suggestion to the learner which appears in this section usually is for him to proceed in any quest which he desires. However, the learner should be directed to discuss his ideas with his teacher.

Write only one or two quest activities, but indicate to the student he should identify his own quest activity. REMEMBER, the student should NOT be graded on his quest because he has already completed the post-test. The quest should deal with related ideas, NOT the one taught by your UNIPAC.

ANSWER KEYS FOR SELF-TESTS

The self-tests can be an activity, an experiment, an exercise, or a few questions to be answered. However, REMEMBER, these are SELF-Tests and some method of self-checking must be provided.

NOTE:

The key to the post-test is stored in the teacher's section and serves as a terminal check for the teacher to know when the student has reached the "end" of the UNIPAC.

STUDENT EVALUATION FORM
for
____________________UNIPAC

(write in title of UNIPAC)

Please complete the form below and drop it in your teacher's box. You don't need to sign your name. Your opinion will be appreciated, so don't ask a friend to help you, please.

Place an X in the appropriate blank.

1. Before you started this UNIPAC, did you like ______________________.
   (write in the subject)

   yes _____ no _____

2. Do you like _________________________ now?
   (write in the subject)

   yes _____ no _____

3. Do you like the UNIPAC method of learning, or the required daily assignment method of learning?

   _____ UNIPAC   _____ Required daily assignment

4. What do you like best about this UNIPAC?

5. What do you dislike the most about this UNIPAC?

6. How could this UNIPAC be improved?

7. Rate this UNIPAC with a value from 1 to 5:
   One (1) means you think this UNIPAC was no good.
   Three (3) means you think this UNIPAC is "OK."
   Five (5) means you think this UNIPAC is very good.
   Two (2) and four (4) fall between "no good" and "OK," or "OK" and "very good."

   Your rating _____.

THIS SECTION FOR TEACHER USE

____

(*title*)

Instructions to the Teacher

I. Instructional Approach

Indicate whether the UNIPAC consists of facts, data, and information to be presented to the learner or if the discovery approach is to be used. If disclosure of specific items of information by the teacher would negate potential "discovery" value to the learner, those cautions should be included in this section.

II. Identification of Learners

Suggest methods for identifying those students who would most benefit from this UNIPAC. If there are prerequisites, limitation, or previously acquired skills necessary for a learner to proceed with this UNIPAC, they should be specified in this section.

III. Special Instructions

A. Equipment Needed - *for example: 16 mm projector*

B. Materials Needed - *for example: The World Almanac*

C. Media Needed - *for example: 16 mm film*

D. Facilities Needed - *for example: science laboratory, bunsen burner*

If the successful application of the UNIPAC requires items not normally found in the classroom or school, they should be specified in this section. If the learner is directed to refer to printed material, a complete bibliographic entry must be included here. In the case of AV media, give all pertinent data: title, producer, film size, tape or record speed, etc.

IV. Instructions for Evaluation

A. Special requirements:

If there are special cautions that the teacher needs to know before proceeding with any of the evaluation materials, they should should be listed in this section. If realia or special oral questions are to be used, they should be called to the teacher's attention.

B. Test Keys

Usually, the only keys in the teacher's section are for the pre- and post-tests. The Student's Section usually contains the keys for the Self-Tests. If the Pre-Test or Post-Test is of such a nature that a key can't be constructed on paper, the outline to assist the teacher in evaluating pupil performance must be included here.

V. Suggested Subsequent UNIPACS

If there are additional UNIPACS which you know have a close correlation with this one, they should be listed here. If this is a UNIPAC from a series, so indicated.

HOW CHILDREN LEARN TO THINK

There is a danger in too often telling students answers - they tend to become too dependent on the teacher and adults, too dependent on some supposed authority. The following is a simplified outline of things teachers can do to help children learn critical thinking.

The Thinking Process:

1. Locate the problem: The problems can come from class activities

   example - Why is there water on the outside of the ice-water pitcher?

   Why don't we have a school newspaper?

2. Holding on to the problem: Involves keeping the children's attention on the stated problem and not taking any "side trips."
3. Suggesting answers: The making of suggestions without pressing for possible solutions. Some answers will be better than others, but if all (or most) are not welcomed, few responses will be made. Some responses will be worth writing down for further consideration.
4. Predicting outcomes: From the previously acquired suggestions the teacher may ask, "What would you expect to happen if we tried this?" Possible consequences need to be considered: whether they are desirable or undesirable, the implications of the suggestions, what and who would be involved, costs, possible opposition to the play, or the support it might receive. On the basis of such considerations the plan that according to predictions would be most satisfactory can be tentatively selected.
5. Getting the facts: Sometimes the problem is merely to find the facts, and sometimes facts are needed in order to solve the problem. What sources are available? Books, Committee, resource person and excursion. On the basis of the facts, the tentative solution may

be accepted and action taken, providing one has reasoned logically all along.

6. Sticking to logic: There is a tendency to escape from true casual relations. Because something happened before something else did, the first was not necessarily the cause of the second. The rooster that thought the sun rose because he crowed was dismayed when it rose on a day he overslept. Judgments need to be as objective as possible. Prejudices must be recognized. The danger of overgeneralizing must be guarded against.

Presenting to the class the results of a thinking job well done is a good incentive to continued good thinking. This can be done in a variety of ways. But, let's also instill the sense of accomplishment for a job well done as a personal satisfaction. A word of approval as recognition will often suffice.

EASTERN WASHINGTON STATE COLLEGE
Department of Education

Working Outline for a Presentation on Using Performance Objectives to Design Learning Activities

I. State of Washington--moving ahead
   A. Interim programs (certification of presently employed practitioners) being approved by State board
      1. speech and hearing clinitians
      2. school counselors
   B. Professional education agencies (colleges/universities, professional associations, school organizations) working out new relationships to assume responsibilities for professional preparation, staff development, and certification
   C. agencies working on performance criteria

II. Professional education--2-sevel consideration
   A. primarily professional education agency (les') decision--what is it that you want people, who wish to play certain professional roles, to be able to do?
   B. agency (les) in relation to individual--how will professional education agency (les) help unique individuals become what they want to become individually and still achieve competence in playing the roles that the responsible and authorized agency (les) has (have) defined?
   C. sum--during program implementation, are individual and agency (les) objectives and intentions being realized?

III. Professional education and certification
   A. related to whether or not objectives and intentions can be realized and continually renewed
   B. what a person can and should do as evidenced by what he does do
   C. as that affects ultimate consumers--common school children and youth

IV. What is learning?
   A. learning--process of changing
   B. evidenced by behavior
   C. talking about vs. doing
   D. concentration on ends in the sense of whether or not individual does learn or evidence a desired goal
   E. concentration on means (instructional planning and methodology) in the sense of how can one learn or evidence
      1. freedom for teahcers in planning and teaching
      2. freedom for learners in ways to learn or evidence

V. Performance objectives
   A. specify clearly what the learner will be able to do when he has achieved the objective; a proposed change in the learner
   B. describes important conditions under which learner will be expected to demonstrate his competence
   C. how learner evaluated (acceptable performance)
   D. performance outcomes of teachers--performance of teachers and consequent performance of clients (pupils) engaged in learning under supervision of those teachers

E. what do I need to know to be competent in Language Arts as a discipline (Prerequisite)
F. what do I need to affect pupils of Language Arts (teaching behavior)
G. student performance--one index of teacher's ability

VI. Learning (or screening) "packages"
  A. one way of looking at "packages" and their components (see p.4)
  B. developing into learning systems

VII. Performance objectives and learning "packages" -- some advantages
  A. learner's sequencing and scheduling own learning activities
  B. creating his own activities
  C. through feedback (self-observation), learner can evaluate his own progress
  D. evaluation becomes helping, not preventive
  E. clarity of intent of what is to be learned
  F. quality of goals emphasized (continually building)
  G. appropriate and "fair" evaluation on whether or not something has been learned (basis of student and teacher performance)

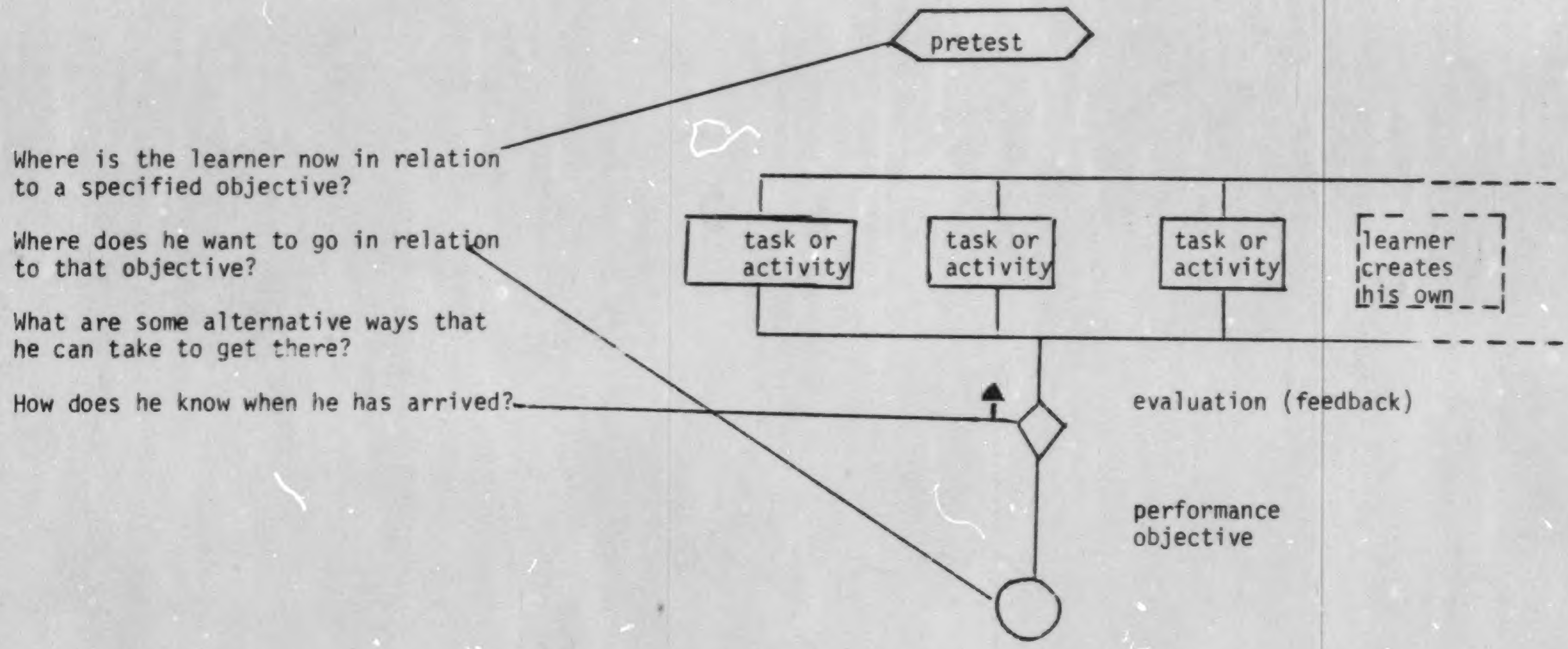
VIII. Performance objectives and learning units--qualification-elaboration
  A. provide a place of a whole
  B. not a comprehensive learning or evaluation device
  C. designed to be useful for what learners are preparing to do
  D. examining roles and writing objectives--rewarding
  E. analysis and writing provide perspective and direction for self-improvement

IX. Difficulties in writing performance objectives for professional roles
  A. tough intellectual work; people, given an objective writing assignment, often exhibit avoidance behavior
  B. difficult to keep categories of objectives "clean"; people get bogged down trying to develop a satisfactory scheme for relating less specific with more specific objectives
  C. many want a model set of objectives . . . to avoid above
  D. in a non-authoritarian environment (approval and positive reinforcement lacking), some people and groups lose interest; result--story-telling, humor, relating of personal experiences
  E. educational language is not precise; available taxonomies apply to writing of objectives for students, also not performance oriented; difficult to find useful definitions
  F. persons ego-involved in discussions; preconceived notions of role and/or present work assignments may confuse work on writing objectives
  G. many have spent time writing objectives--haven't seen results
  H. takes time to reflect on professional roles and analyze them carefully; some grow impatient with group pace and problem solving
  I. some persons and groups have difficulty dealing with abstractions and the meaning of words
  J. some people are hesitant to confront groups with their feelings regarding the group's effectiveness; needed--expression of feelings so that individuals and groups can examine and work of effectiveness

X. Professional education and certification--as a means of helping teachers, prospective teachers, and students realize their objectives and intentions
    A. learners desire to know what is being asked of them and why (rationale for doing specific things)
    B. teachers (educators) are interested in preparing effective instruction
    C. educators--interested in communicating certain skills and knowledge to their students
    D. teachers want to communicate in such a way that their students will be able to demonstrate their achievement of appropriate and agreed upon objectives

XI. Long and difficult road ahead
    A. if the state is willing to travel it
    B. significant reaults for professionals and prospective educators
    C. most imporatantly for children and youth (main goal in appropriate preparation and certification)

LEARNING (OR SCREENING) UNIT



Where is the learner now in relation to a specified objective?

Where does he want to go in relation to that objective?

What are some alternative ways that he can take to get there?

How does he know when he has arrived?

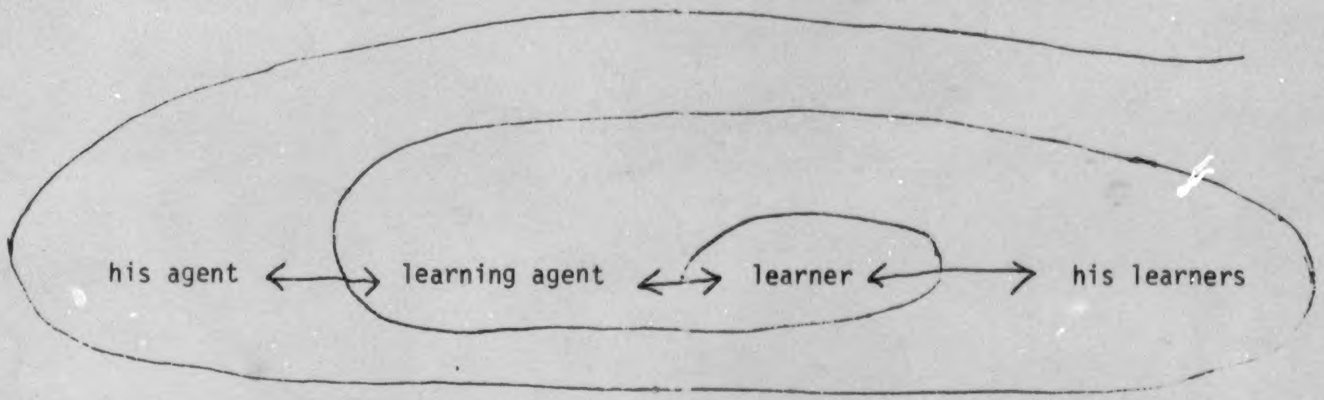
pretest
task or activity
task or activity
task or activity
learner creates his own
evaluation (feedback)
performance objective

Some comments, assumptions, biases concerning professional education staff development, performance objectives, and learning (or screening) units:

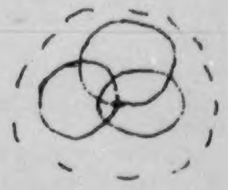
A performance objective states that under certain conditions, a learner will do something specific, to some specified extent.
Performance (or behavior) can be observed, to some degree described, and in some way valued (in and of itself and/or in terms of its effect on others).
Responsibility for achieving an objective is shared, by the Individual learner and that person or those persons, or agencies, authorized and designated to be responsible.
Learning unit designers are responsible for providing a rationale for instructional objectives and learning activities.
Learning unit designers should attempt to specify who the learner is (audience), and what role (s) the learner will be trying to fulfill.
The learning unit should be usable according to the appropriate role(s) that are identified.
The learner and unit teacher-evaluator should agree on the appropriateness and consistency of the unit components.
Given an agreed upon objective or set of objectives and a general context for learning and evaluation, the learner should be provided some freedom in specifically what, where, when, how and why to learn.

Learning is change; it is not necessarily linear: It may be a function of varying and various experiences.
There may be prerequisites for approaching a specific objective or learning activity.
Two or more units can be brought together to make a learning system.
Evaluation should be a form of self-observation so that the learner knows where he is in relation to an objective.
Evaluation should attempt to be a verification and comparison of the perceptions of the learner by the learner and his unit teacher-evaluator.
Evaluation should be both specific and helpful so that the learner can make appropriate decisions considering the extent of his abilities and weaknesses.
Learning tasks and evaluation procedures should provide a learner with his own learning style, abilities, and weaknesses.
The criteria (traits to be exhibited) indicating whether or not a learner has achieved an objective should be specific (but open-ended) and known (and understood) by the learner and his unit teacher-evaluator.
The effectiveness of a learning unit or system is, to some degree, a function of the unit designer, the unit teacher-evaluator, and the individual learner.
The importance or value of a unit or system may be gauged in terms of the effect it has upon its immediate "consumers" (designers, teacher-evaluators, individual learners).
The value of a learning unit may be weighed by whether or not it helps the learner affect others to help satisfy their own needs and objectives.

in that professional education, performance objectives, and learning tasks are in some sense geared for the learner to affect others, the relationship between the learner and his learning agent (helper) can be reflected and recapitulated in other learners and agents, and in the educational and societal systems at large.


his agent
learning agent
learner
his learners

or



N.B. Whatever the scheme, activity centers around or resonates from the learner and learning.

KEY CONCEPTS OF INDIVIDUALIZATION

1. Knowledge of pupils. The teachers know each pupil. This concept is broader than merely knowing an I.Q. or a reading score. It indicates knowing the habits,interests, hobbies, family relationships and other aspects of the pupil's life outside the classroom.

2. Physical facilities. A variety of resources is available and in use. This covers every type of resource for in-class or out-of-class use, including programmed materials, audio-visual aids, as well as books, newspapers, magazines and specimen objects.

3. Different tasks. Different pupils work on different tasks selected at least in part by the pupils themselves. Teachers make a variety of assignments designed to individual requirements for both in-class and out-of-class work.

4. Participation. Learning activities are sufficiently varied that all pupils are seen participating in some learning activity.

5. Communication. Instead of sending out oral messages to "whom it may concern", the teacher communicates individually as may be needed with pupils singly or in small groups.

6. Modification of questioning. The teacher's questions vary in type and difficulty for different pupils, and in order to make sure each pupil understands.

7. Complementary teacher-pupil roles. The teacher adopts the role of a resource person and helper: The pupils contribute to the direction or content of the lesson and have the opportunity to leed and initiate change.

8. Time for growth. The time that pupils require to complete a given task or master a given concept or skill must, because of individual difference, vary greatly. The teacher therefore provides for both extra help and enrichment through planning or allowing the use of extra class time.

9. Individual evaluation. Instead of a fixed standard that all are expected to attain, or fall by the wayside, evaluation is judged as change or improvement at individual rates of growth and development.

KEY CONCEPTS OF INTERPERSONAL REGARD

10. Demeanor. The teacher is relaxed, good-natured, cheerful, courteous and, if using humor, always inoffensive, rather than yelling, shouting, frowning, glaring, insulting or sarcastic. Pupils reflect similar demeanor.

11. Patience. Both teacher and pupils take time to listen to and accept one another, rather than press, hurry, interrupt or give rigidly directive orders.

12. Pupil Involvement. Pupils are eager, prompt, willing, show initiative or make voluntary contributions, instead of being apathetic, reluctant, or slow to respond.

13. Physical movement is permissive, free, instead of submissive and dominated by the teacher.

14. Respect. There is mutually shared respect among pupils and teacher as evidenced by commending, accepting, helping, rather than rejecting or ignoring.

15. Error behavior. Pupils and teacher both openly and naturally accept and recognize errors of each other, rather than trying to cover up, losing face or showing guilt.

16. Pupil problems. Personal problems or handicaps are accepted with consideration, understanding and sympathy, rather than with ridicule or embarrassment.

17. Atmosphere of agreement. Pupils and teacher respect opinions of others and come to agreements without external coercion; conflict and hostility are not characteristic of problem solving.

18. Teacher-pupil identification. Teacher meets pupils on their level as one of them and is not withdrawn, aloof or superior.

19. Evaluation as encouragement. Positive, encouraging and supportive criticism, which pupils accept, is used rather than discouragement, disapproval, admonishment, blame or shame, which pupils ignore or reject.

KEY CONCEPTS OF CREATIVITY

20. Time for thinking. Time is allowed to think and discover, play with ideas, manipulate objects, experiment, without pressure to get "the answer" or get it "right".

21. Abundance of materials. Pupils have the stimulation of materials and other resources in great richness and variety.

22. Skills of thinking. A variety of skills used in creative thinking is practiced: inquiring, searching, manipulating, questioning, abstracting, analyzing, summarizing, outlining, generalizing, evaluating and the like.

23. Testing ideas. The examination, comparison and testing of divergent ideas are encouraged, as opposed to referring to authority.

24. Unusual ideas. Unusual ideas are entertained without anxiety or tension, and unusual questions are considered with respect.

25. Question and answer technique. The teacher uses open-ended questions rather than questions with a "right" answer presents unsolved problems rather than a lecture with "correct" information filled in; pupils test and challenge rather than attempt to key in on the wanted correct answer, and are encouraged to consider questions for which they do not have the answer.

26. Self-initiated activity. Pupils take responsibility for self-initiated learning, extend the limits of the topic, and the teacher encourages and credits pupil efforts to go beyond the lesson plan assignment or question.

27. Opportunity for speculation. There is much opportunity for guessing, supposing, hypothesizing, forecasting results with and without evidence, without the fear that wrong answers will be penalized, as opposed to handing out the correct answers in order to save time.

28. Evaluation as motivation. Originality is rewarded with recognition, pupils' ideas are treated as having value, unusual questions and diverse contributions are recognized and praise rewards creative effort, while formal evaluation and marking are delayed.

KEY CONCEPTS OF GROUP ACTIVITY

29. Physical arrangement. Seating facilitates interaction, as in face-to-face rather than audience situations.

30. Teacher purposes: The objectives and purposes of the teacher are to cultivate and facilitate social skills, cooperation, idea exchange and shared problem solving, rather than require pupils to work in isolation.

31. Decision making. The group shares in decision making, rather than having decisions made by the teacher, and the group told what to do.

32. Intercommunication. There is pupil-pupil communication as well as teacher-pupil communication, and pupils are free to seek assistance among their group mates.

33. Conflict resolution. Where conflict among group members occurs, the group itself resolves the conflict rather than requiring policing by the teacher.

34. Cooperation. All pupils are seen cooperating in the group activity.

35. Role distribution. Pupils share the leadership role with the teacher, and are free to disagree with teacher proposals.

36. Group goals. Goals of the group are accepted by all members of the group instead of factionalism that divides the efforts and purposes of the group.

37. Group personality. Syntality, cohesiveness, or a feeling of internal interdependency characterizes the group personality.

38. Consenus. The rules or mechanisms for arriving at group decisions result in uncoerced consensus rather than the forcing of a leader's opinion or hostility of a minority.

39. Group evaluation. Evaluation of group attainments is a function of the group rather than the prerogative of the teacher.

40. Teacher's group role. The teacher's role is that of a member of the group rather than that of a director or superior who sets all goals and procedures.

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9. Individual evaluation. Instead of a fixed standard that all are expected to attain, or fall by the wayside, evaluation is judged as change or improvement at individual rates of growth and development.

The four characteristics of the educational setting that are examined in applying Indicators of Quality were determined by educational experts who were asked to decide upon what bases they would judge school quality. Since all four have to do with behavior of pupils and teachers, it is possible to watch the teaching-learning procedure and determine from the behavior observed whether the intent of one or another is present. But this necessitates knowing what specific aspects of behavior are critical to the realization of each criterion characteristic.

KEY CONCEPTS OF INTERPERSONAL REGARD

10. Demeanor. The teacher is relaxed, good-natured, cheerful, courteous and, if using humor, always inoffensive, rather than yelling, shouting, frowning, glaring, insulting or sarcastic. Pupils reflect similar demeanor.

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An extensive search of the literature was made--books, pamphlets, periodicals, anthologies, research studies proposed, written or reported by authorities in each of the four areas. What do the experts, as a group, say must be present in the classroom setting in order for individualization of instruction to be realized? What must be present for interpersonal regard? What for creativity, for group activity? Conversely, what in the classroom setting works against the realization of each?

Certain key concepts were found to define the content of the four criteria. Nine key concepts of individualization were discerned, ten key concepts of interpersonal regard, nine key concepts of creativity and twelve key concepts of group activity--forty key concepts in all.

KEY CONCEPTS OF CREATIVITY

20. Time for thinking. Time is allowed to think and discover, play with ideas, manipulate objects, experiment, without pressure to get "the answer" or get it "right."

21. Abundance of materials. Pupils have the stimulation of materials and other resources in great richness and variety.

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28. Evaluation as motivation. Originality is rewarded with recognition, pupils' ideas are treated as having value, unusual questions and diverse contributions are recognized and praise rewards creative effort, while formal evaluation and marking are delayed.

Some of these relate exclusively to teacher behavior or pupil behavior; others may be discerned both in what teachers do and in what pupils do. This overlap among the two types of "actors" on the classroom "stage"--teachers and pupils--results in a total of 51 items to the instrument derived from the 40 key concepts.

The authorities that were consulted are listed below, classified by each of the four criterion characteristics. It may be seen that some authorities appear in more than one area. Following is a list and brief description of the 40 key concepts derived from their writings. A citation of the literature and a fuller description of how the concepts were derived is contained in the publication Signs of Good Teaching, available from the Institute of Administrative Research.

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37. Group personality. Syntality, cohesiveness, or a feeling of internal interdependency characterizes the group personality.

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39. Group evaluation. Evaluation of group attainments is a function of the group rather than the prerogative of the teacher.

40. Teacher's group role. The teacher's role is that of a member of the group rather than that of a director or superior who sets all goals and procedures.

"MACHINE SCHEDULING"

by

Dr. Dwight Allen

(A speech to the Oregon Program Team Teaching Project, Summer, 1963)

In this presentation I wish to discuss "modular scheduling." A definition of "module" includes its horizontal dimension, which is the number of students, and the vertical dimension, which is the length of time involved. This means that we can then define an area to be scheduled.

At Stanford we started out some four years ago to solve the problem of scheduling. The reason that we started out to solve the problem came about after we had been working with some of the proposals made by Dr. Lloyd Trump and others. We asked the question: "Well, this is all very good but how do you put together your schedule?" We called Lloyd Trump and asked him how to do this and he said he hadn't gotten that for yet. We then called IBM and they sent up a man named, appropriately enough, Mr. Smart, and he said that IBM could do anything that we could do by hand first. We couldn't tell him how we did it by hand so we embarked on the task of doint it by had which turned out to be quite some task! Six months, and about a million plastic tips later we developed what we called the "Mosaic Hilton." This was a five-story "whatchamajiggie" that had all these various sized classes fitted together in a mosaic. At that time, IBM said they didn't think they could help us and so we got into the scheduling business.

We have been working for four years to try and develop machine procedures to make practical schedules and I can report now that we have succeeded in developing these procedures. We have actually scheduled a school. In fact, we have scheduled two schools. We have scheduled a school that has a completely flexible schedule and one that has a completely traditional schedule. So machine scheduling is something that we can do. We are now doing it; we have done it! We've scheduled the Lincoln School in Stockton. Tonight, if everything goes well, we will have our first run with the data for Portland's Marshall High School. We will have their schedule ready for them by the end of August. There is no doubt about having the schedule ready. The only doubt is how good the schedule will be.

What we want to do is to develop a scheduling procedure that will be so good that it would reduce us to anonymity. The anonymity of the schedule maker is possible only when he can construct such a good schedule that no one has to worry about scheduling any more. We want to develop a procedure which will allow teachers and administrators to offer the kinds of programs they would like to offer without any regard to schedule limitations. For this reason, we did not start out to construct a traditional schedule. We did scale a generalized solution, insofar as possible, to the scheduling problem. The whole key to our generalized solution was the idea that the horizontal dimension on the schedule module was the number of students and the vertical dimension was the length of time. This means that we can take a course area and say to teachers: "So long as you honor a module (in our example, we suggest a half hour module,) you can develop classes however you wish. You can have classes that are one module long, two modules long, three modules long, four moldues long, ten modules long! This is up to you. You can alter these as you wish so long as you stay withing the framework of the basic module. In terms of the size of class there is no problem; it can contain any number of students you want. You can have some classes that comprise the whole group; some that are half of the group; some that are a quarter of the group; however many you want. What we are really saying to teachers is that they have an area to be scheduled and that if they want to have some large group instruction, some medium-sized group instruction, some small group instruction or some independent study, this is up to them to define. We can then program the machine to sort out the modular data and to submit sample schedules which are subject to continued refinement in their initial form.

Suppose an English teacher, instead of having five classes of thirty, is assigned the responsibility for 150 junior students. Next the teacher is told she may teach these students according to any schedule she desires. "Well," she says, "I'd like to see them three times a week for a half hour - altogether, all 150 of them." Fine, we'll do that! Then she says, "I think that I'd like to have three groups of fifty in a resource center for an hour and a half where they can be writing on things and investigating things and I have some time for individual conferences and so on. They will be working pretty much on their own, but I will be there to work with them. We want this a little bit longer so they can really get immersed in their work and carry it through. Then I think I want to have them ten at a time. Fifteen groups, ten at a time, so that for one hour each week I can really sit down with a small number of students and have a crackerjack discussion or something like this. Then for an hour a week I want them to meet in student-led small groups, maybe five at a time." All right, then let's examine this teacher's work load. She has planned for herself a twenty-one hour work week in terms of student contacts plus individual conferences. If she doesn't like her work week, she can shift the balance of large and small group instruction. Now, what happens? After we have designed this structure, we feed it to the machine and the machine then comes up with a class schedule which, say, meets Monday, Wednesday, and Friday from 8:00 to 8:30, Tuesday at 9:00, Wednesday at 10:00, and Thursday at 2:00, and other modules spread through the week at other times. The teacher still has the complete responsibility for the English program for these 150 students but with a new and realistic time blocking. This situation also illustrates the fact that this kind of a flexible schedule does not necessarily involve "team teaching."

Oftentimes we are inclined to say "team teaching" and "flexible scheduling" as though they are both one thing. You can have a very drastic flexible schedule without team teaching! You can have whatever complexity of flexible scheduling that you wish as a teacher, totally independent of whether or not this is going to be a part of a teaching team. However, you can also say: "Let's have a teaching team! Let's have 300 students here instead of 150." Say that you want them for 8 modules, four hours a week. In addition, say that one hour a week is going to be for unscheduled independent study and that we have assigned Teachers A, B, and C to these 300 students. Their programs must then be planned cooperatively by Teachers A, B, and C who say: "Well, we want to see them all together a couple of times a week and then we want to break them down for a couple of large groups where we can do some gross ability grouping. Then we want 'these students' to have one kind of a pattern and 'these students' to have another kind of a pattern." (You don't have to do the same thing with all of the students.) Again, you see, the horizontal unit is students, the vertical unit is time. What we've selected for the example turns out to be a student module of fifteen students and a time module of thirty minutes. (Out of this time module also comes the passing period of five minutes. Note that we don't add passing periods between modules.) So you see, the flexibility concept works for individual teachers and teams, both.

May I cite another example. We could have a class with five modules total each week with three half-hour presentations plus a one-hour group section. This is a two and half hour course per week. Or, we might have a course with 10 modules. Such students may be a little more advanced or have a little more ability or have a little more interest and it is perhaps a smaller group than average. It may have the same three lectures that the average groups have but, in addition, it may have an additional half hour lecture this week or a larger research-type period.

Again perhaps I have a small group of students who are really interested and who want some intensive work in a given subject area. They can take the same large groups and other students take but they may take a different series of research periods and small group study seminars than do the students in the other groups. In other words, you see, we can build variations in curricular time; variations in structural pattern, and variations in period length under the modular system.

A modular schedule won't allow you to do anything that is illogical. You can put so many requirements on a schedule that no machine can schedule them. The machine can't really do anything except count well. When it comes to making decisions, it is a blooming idiot. It is a real idiot. It cannot make a single decision. What it can do is implement decisions which we have arrived at earlier. For example, suppose I tell my secretary: "If Mr. Brown calls and says "A", tell him "B"; if he says "C", tell him "D"; if he says "E" tell him I'll call him back tomorrow." So we "say" to the machine, "if you find such and such a circumstance, schedule this way. If you can't find any way, spit the student out and we will have to make some new dicisions regarding him because what we have requested is illogical." Perhaps we have requested too many single section courses for this student and the combination of students who have been given the certain combination of single section courses is such that we simply can't honor all the requests at the same time. Either the structure of the courses, the length of the school day or the requests of the student will have to be changed. The machine can't say which of these decisions to make. You, as the teacher, administrator--whoever is running things educationally, has to meke the educational decisions. The machine can't decide who goes in lane 1, who goes in lane 2, and who goes in lane 3. If we allow the machine to make this decision by giving it arbitrary data like adding two times the grade point average plus three time the SCAT score, minus the STEP score over four, divided by three, we may get an index but it will still be an arbitrary formula. If the formula doesn't work, don't blame the machine! Blame the arbitrary educational decision that was fed into the machine. The machine hasn't made the decision. We have made the decision which the machine has carried out.

GROUP EVALUATION

Date____________________

No Reward	1	2	3	4	5	6	7	8	9	Completely Rewarding

THE GROUP WAS REWARDING TO ITS INDIVIDUAL MEMBERS

No Common Purpose	1	2	3	4	5	6	7	8	9	Completely Integrated

INDIVIDUALS AND THE GROUP AS A WHOLE WERE WORKING TOWARDS THE SAME GOALS

Not at All	1	2	3	4	5	6	7	8	9	A Great Deal

MEMBERS CONVEYED TO EACH OTHER HOW THEY REALLY FELT ABOUT MATTERS

Not at All	1	2	3	4	5	6	7	8	9	A Great Deal of Tolerance

MEMBERS WERE TOLERANT OF DIFFERENT OPINIONS

One Plop After Another	1	2	3	4	5	6	7	8	9	True Consensus Achieved

DECISIONS ARE ACCEPTED BY THE GROUP AS A WHOLE

One or a Few Dominate	1	2	3	4	5	6	7	8	9	Everyone Participates Freely

DEGREE TO WHICH LEADERSHIP OPPORTUNITIES ARE SHARED

Not at All	1	2	3	4	5	6	7	8	9	Completely

GROUP MADE USE OF ITS AVAILABLE RESOURCES

Bull Session	1	2	3	4	5	6	7	8	9	Complete Organic Development of Ideas

MEMBERS BUILT ON EACH OTHERS IDEAS

Not at All	1	2	3	4	5	6	7	8	9	Completely

MEMBERS ACCEPT AND TRUST EACH OTHER

Completely Unclear ________ 1 2 3 4 5 6 7 8 9 ________ Completely Clear

GOALS WERE CLEAR

Competitive
Out to Win
Own Points ________ 1 2 3 4 5 6 7 8 9 ________ Cooperative

MEMBERS WERE COOPERATIVE INSTEAD OF COMPETITIVE

Withdrawn
Flight from Task
Not Interested ________ 1 2 3 4 5 6 7 8 9 ________ Worked Productively

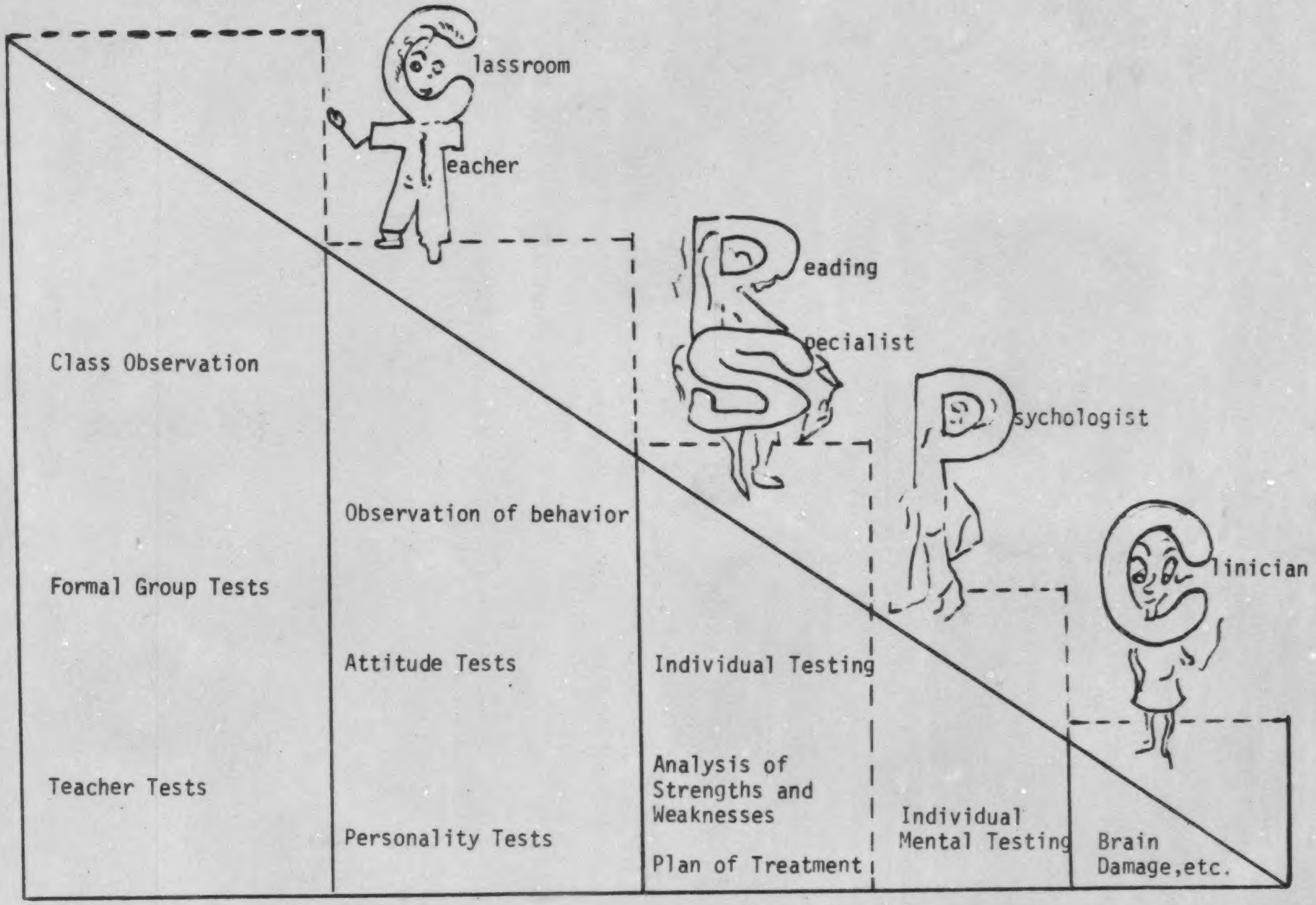
MEMBERS WORK EFFECTIVELY

GP: 200
8/29/67

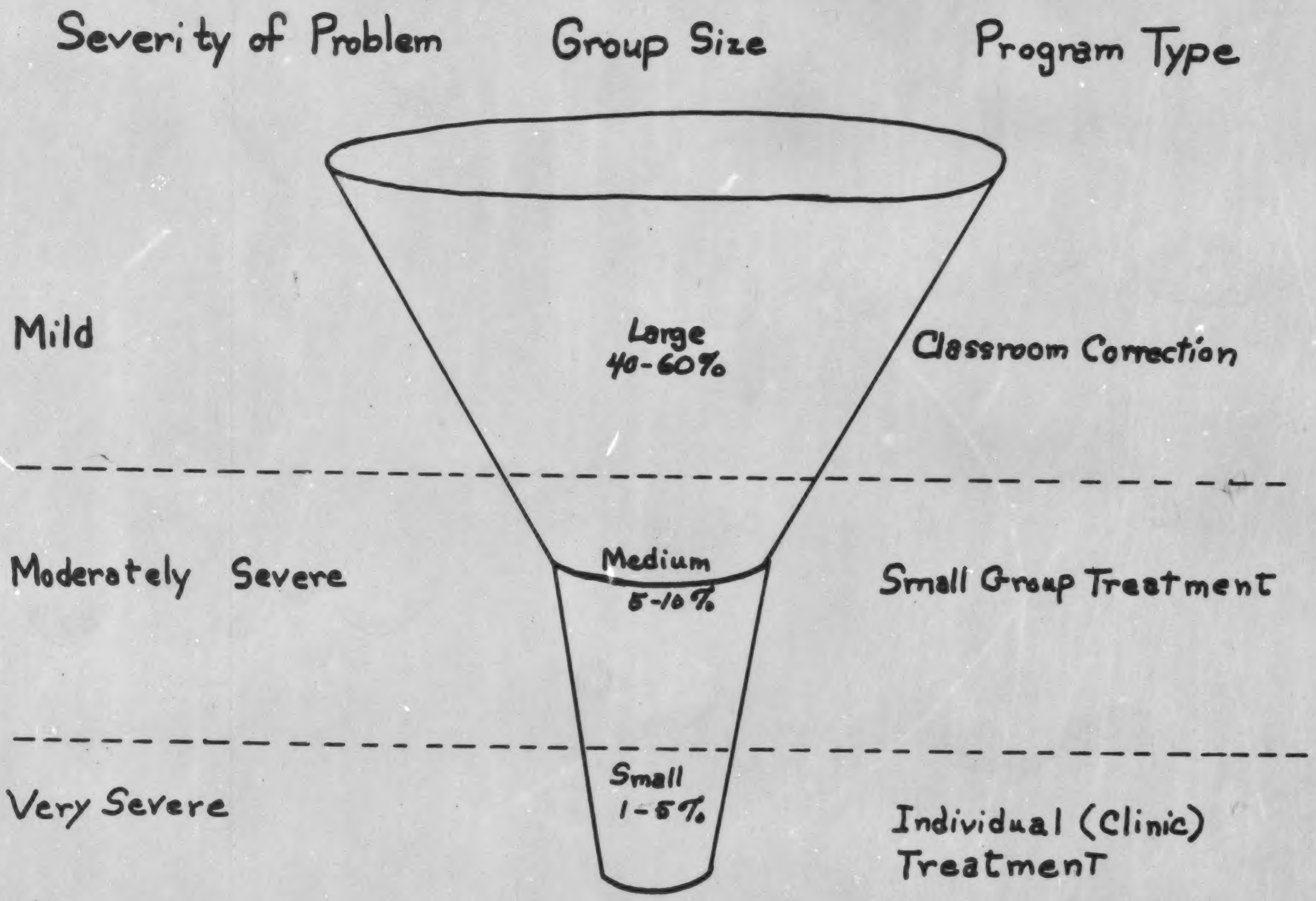
Reproduced from--
Readings in Group Process
Graduate School of Business
University of Pittsburgh

DETERMINING INDIVIDUAL NEEDS

What is Reading?


Classroom
Teacher
Reading
Specialist
Psychologist
Clinician
Class Observation
Formal Group Tests
Teacher Tests
Observation of behavior
Attitude Tests
Personality Tests
Individual Testing
Analysis of Strengths and Weaknesses
Plan of Treatment
Individual Mental Testing
Brain Damage,etc.

Levels of Diagnosis


Severity of Problem
Group Size
Program Type
Mild
Large
40-60%
Classroom Correction
Moderately Severe
Medium
5-10%
Small Group Treatment
Very Severe
Small
1-5%
Individual (Clinic) Treatment

CHECKLIST RECORD OF CLASSROOM OBSERVATIONS ON PUPIL'S READING*

Name_______________ Grade_______________ Teacher_______________ Pupil_______________

Directions: Tally significant observations day by day. Space at bottom of each situation can be used for noting specific errors, interpretation, general impression, evidence of program, and recommendations.

I. When Giving Oral Reports

Vocabulary

_____ Rich
_____ Words mispronounced
_____ Meager
_____ Meaningful

Speech

_____ Distinct, clear enunciation
_____ Inaudible
_____ Stuttering
_____ Incorrect sounds
_____ Monotonous
_____ Expressive

_____ Complete Sentences
_____ Simple sentences
_____ Complex sentences
_____ Good organization
_____ Repetition of ideas
_____ Interpretation of ideas
_____ Imaginative

Insights

---

* Strang, Ruth. Diagnostic Teaching of Reading. New York: McGraw-Hill Book Company, 1964, pp.52-55.

CHECKLIST RECORD OF CLASSROOM OBSERVATIONS ON PUPIL'S READING (Continued)

I. When Giving Oral Reports

Interests

_____ Reads at home

_____ Uses library

_____ Has own library

_____ Special Collections

_____ Sports

_____ Trips with family

_____ Science

_____ Art

_____ Music

_____ Shop

Reactions of peers

_____ Interested

_____ Uninterested

_____ Sympathetic

_____ Friendly

_____ Critical

_____ Hostile

Emotional factors

_____ Poised

_____ Relaxed and happy

_____ Tense and anxious

_____ Self-confident

_____ Shy and embarrassed

_____ Antagonistic

_____ Unhappy

Insights

CHECKLIST RECORD OF CLASSROOM OBSERVATIONS ON PUPIL'S READING (Continued)

II. Oral Reading and Group Instruction Periods

Word recognition skills

____Basic sight vocabulary

____Tries to sound words

____Tries to pronounce by syllables

____Tries to analyze structure

____Substitutes another word

____Makes wild guess

____Reverses letters

____Reverses words

____Reverses phrases

____Uses context clues

Comprehension

____Answere factual questions correctly

____Gives main ideas

____Tells whole story accurately

____Draws conclusions

____Makes generalizations

____Follows directions

____Gives sensible reasons on thought questions

____Gives fantastic, irrelevant reasons on thought questions

____Relates reading to experiences

____Unable to relate reading and experiences

____Expression in reading

Peer relationships

____Gets along well with girls

____Gets along well with boys

____Respects others

____Disturbs others

____Works alone only

____Works well with one other child

Location of information

____Uses index

____Uses table of contents

____Uses maps

____Uses dictionary

____Uses diagrams

____Uses enclyclopedia

Insights

______________ ______________ ______________ ______________

______________ ______________ ______________ ______________

CHECKLIST RECORD OF CLASSROOM OBSERVATIONS ON PUPIL'S READING (Continued)

III. Dramatization of Stories

Reading Skills

____Reads with expression

____Interprets behavior of character accurately

____Shows little understanding of character

____Interprets sequence accurately

____Reads too slowly

____Reads too rapidly

Personal development

____ Poised

____ Relates characters and story to won experience

____ Interest evident

____ No interest

____ Shy, ill at ease

Insights

________________________________ ________________________________

________________________________ ________________________________

IV. Silent Reading Situation (Free-choice Reading or Library Time)

Location of material

____Finds suitable book quickly

____Follows suggestions of other children

____Has teacher help

____Uses library Classification

Attitude toward reading

____Engrossed in book

____Enjoyment evident

____Independent

____Dependent upon others

Reading level

____Primer

____First

____Second

____Third

____Fourth

Physical factors

____Holds book up

____Holds book close to face

____Lip movements

____Squints

____Blinks eyes

Interests

____Animals

____People

____Science

____History

____Adventure

CHECKLIST RECORD OF CLASSROOM OBSERVATIONS ON PUPIL'S READING (Continued)

IV. Silent Reading Situation (Free-Choice Reading or Library Time)

Location of material

____Uses table of Contents

____Takes useful notes

____Selects too advanced books

____Unable to find any books of interest to him

Attitude toward reading

____Uninterested, resists or avoids reading

____Easily distracted

____Other

Reading level

____Fifth

____Sixth

____Seventh

____Other

Physical factors

____Eyes red or watery

____Complains of headaches

____Bends over book

____Fatigue posture

____Complains of dizziness

Interests

____Fairy tales

____Sports

____Art

____Music

____Cars, planes, trucks, boats

____Rockets

____Armed services

Insights

____________ ____________ ____________ ____________ ____________

____________ ____________ ____________ ____________ ____________

V. Listening to Story Read Aloud

Interest

____Listens attentively
____Listens part of time
____Easily distracted
____Restless and preoccupied
____
____
____

Comprehension

____Evident appreciation of story--talks about it
____Asks related questions
____Responds to humor and excitement
____Answers Factual questions
____Tells main ideas
____Tells whole story accurately
____Relates ideas to own experience

INVENTORY OF GROWTH IN ATTITUDES TOWARD READING

Checklists can be helpful in estimating pupil skills, attitudes, and behavior. A sample checklist for use in observing and evaluating attitudes toward reading is reproduced below. The teacher might use + or - to indicate the presence or lack of the attitude under consideration. Other checklists can be devised to serve other needs.

	Judy	Ann	Jerry	Ed
Does he anticipate reading periods with pleasure?				
Does he use books frequently during free periods?				
Does he find opportunities for reading at home?				
Does he read newspapers and magazines?				
Does he show interest in reading a variety of books?				
Does he read for information?				
Does he usually finish the books he starts?				
What kinds of books does he like best?				
Does he make frequent use of the school or public library?				

SELF-CONCEPT SCALE

Each of us needs to know more about what we are like. This form is to help you describe yourself and to describe how you would like to be. There are no right or wrong answers; each person may have different ideas. Answer these according to your feelings. It is important for you to give your own honest answers.

Think carefully and check the answer that tells if you are like the word says nearly always, about half the time, or just now and then. In the second column check the answer if you would like to be like the word says nearly always, about half the time, or just now and then.

THIS IS THE WAY I AM				THIS IS THE WAY I'D LIKE TO BE		
nearly always	about half the time	just now and then		nearly always	about half the time	just now and then
____	____	____	Friendly	____	____	____
____	____	____	Obedient	____	____	____
____	____	____	Honest	____	____	____
____	____	____	Thoughtful	____	____	____
____	____	____	Brave	____	____	____
____	____	____	Careful	____	____	____
____	____	____	Fair	____	____	____
____	____	____	Mean	____	____	____
____	____	____	Lazy	____	____	____
____	____	____	Truthful	____	____	____
____	____	____	Smart	____	____	____
____	____	____	Polite	____	____	____
____	____	____	Clean	____	____	____
____	____	____	Kind	____	____	____
____	____	____	Selfish	____	____	____
____	____	____	Helpful	____	____	____
____	____	____	Good	____	____	____
____	____	____	Cooperative	____	____	____
____	____	____	Cheerful	____	____	____
____	____	____	Jealous	____	____	____
____	____	____	Sincere	____	____	____
____	____	____	Studious	____	____	____
____	____	____	Loyal	____	____	____
____	____	____	Likeable	____	____	____
____	____	____	A good sport	____	____	____
____	____	____	Useful	____	____	____
____	____	____	Dependable	____	____	____
____	____	____	Bashful	____	____	____
____	____	____	Happy	____	____	____
____	____	____	Popular	____	____	____

CLUES ABOUT CLASSROOM LIFE

So that members of a class and their teacher may get ideas about how to make life more interesting and important for everybody in the class, each person needs to contribute his or her ideas of what needs to be improved. What things happen that shouldn't happen? What ought to happen but doesn't? Try to imagine you are a detective looking for clues to a "good day" and a "bad day" in your class. Jot down what you might look for or might see to answer these questions. There are no right or wrong answers.

What are some clues to a good day in our class? What things happen that are signs of a good day?

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________

What are some clues to a bad day in our class? What things happen that are clues that class is not going the way it should or that you would like it to?

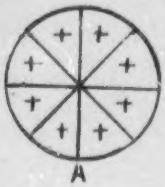
1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________

What are some things that should happen a lot more than they do to make it a better class for learning and having fun?

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________

HOW THEY SEE ME

Just as each part of the day is filled with positive, neutral, and negative things, each person is made up of things we like and things we do not like so much. Below are a number of circles showing persons with different amounts of positive (+) and negative (-) things about them. Which of these circles comes closest to the way you see yourself? Write the letter of the circle which most resembles you right here:___________.



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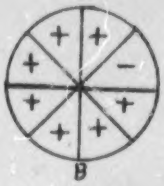

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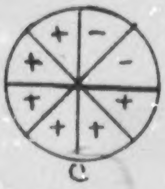

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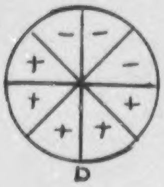

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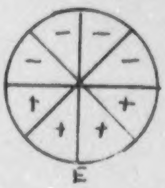

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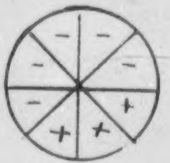

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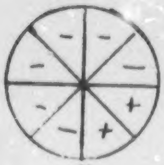

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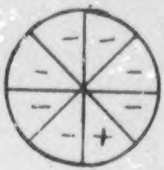
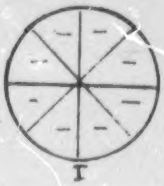


H



I

In the blank following each question, write the letter of the circle that you think each of the persons mentioned would pick for you.

1. Which circle do you think your closest friend would choose to describe you? ______
2. Which circle would the teacher in this class choose? ______
3. Which circle would the principal of your school choose? ______
4. Which circle would your mother choose? ______
5. Which circle would the boys or girls you spend most time with choose to describe you? ______
6. Which circle would your father choose? _____

INTERVIEWING STUDENTS

An interview with a student may provide a teacher with important clues to his behavior. The questions may not be typed or written out as they are on an interview card, but it's usually a good idea to have some sort of outline or plan of approach in mind.

Here is an interview outline, prepared by a teacher to help her find out why a pupil was consistently late to class.

I. Everywhere you go, there are certain rules.

- A. One of our rules is to be on time.
- B. How can we help you keep the rules?

II. Home Conditions.

- A. Do both parent work?
- B. What time do you get up?
- C. Who calls you in the morning
- D. How much sleep do you get each night?
- E. Do you have any special morning duties?
- F. Do you eat breakfast with the family?

III. Way of getting to school.

- A. How far is it from your home to school?
- B. How do you get here? Walk? Bus? Bicycle?
- C. How long does it take?
- D. When do you have to start?

IV. Work out a plan together.

As the teacher asks questions and talks with this student, she tries to be very informal, to ask her questions in a pleasant manner, and to spend a lot of time listening rather than talking. She may not take the questions in order; she may not even have to ask them. They are written out or kept in mind simply to guide her, to keep her from overlooking an important point.

TEACHER REPORT OF OBSERVATIONS

Student's Name______________________________ Age______________ Grade__________

Please check the appropriate phrases on the basis of your observations. Feel free to add any comments in the space at the right.

When faced with a difficult task, does he
_____withdraw from the situation
_____face the problem intelligently
_____act impulsively

In his relations with other children, do you find that he
_____generally avoids leadership
_____usually seeks to lead
_____at times he either leads or follows

Is he usually
_____emotionally calm
_____apathetic
_____excitable

With reference to authority, is he
_____over dependent
_____accepting
_____resistant

In the classroom do you find him to be
_____quiet
_____normally communicative
_____very talkative

When faced with a problem, is he
_____reasonable persistent
_____easily discouraged
_____blindly aggressive

In his play activity does he generally associate with
_____younger children
_____older children
_____children his own age

In his relations with other children, do you consider him to be
_____shy and bashful
_____responsive
_____bold and aggressive

Regarding health, is he
_____usually healthy
_____minor complaints (e.g. headache, etc.)
_____usually ill-poor health

During instruction, he
_____concentrates
_____is usually attentive
_____daydreams

SECTION VII

EASTERN WASHINGTON STATE COLLEGE
Department of Education

FORMAT FOR THE LEARNING ACTIVITY PACKET/PACKAGE

1. Title Page: List the Title/Topic of your Packet then the following items: (your name) - (Produced for Dr. T. K. Midgley) - (qtr., year, name of class).

2. Table of Contents (This paper will assist you sith this item).

3. Statement concerning Audience for which Packet is designed.

4. Statement of Purpose.

5. Major Concept and Sub Ideas.

6. OBJECTIVES

   First write your Observable Behavioral Objectives:

   ...These are things you want them TO DO.
   ...Things you can see and observe them doing. (SKILLS)
   ...Underline the doing words as you list them.

   Next you may list the other Objectives you may have:

   ...What do you want them TO KNOW? (KNOWLEDGE)
   ...What do you want them TO FEEL? (ATTITUDES)

7. Pre-test (mention where the answers are located) (with instructor or in the Appendix, etc.)

8. Introduction to (Packet/Package) (tell them briefly what you are going to do).

9. List of new vocabulary/Special terms/Definitions
   List of materials needed to work with LAP/P.

10. Contract (If and when and where needed) This is an effective technique especially in packets used in Kindergarten through 12th grade.

11. Presentation of (Materials/Content/Activities/Exercises)

    ...This section is the body of the Packet.
    ...Write your materials as if you were talking and working with a friend.
    ...Make your packet as interesting and as motivating as you possibly can.

...Remember get your readers involved and participating in activities (this is a key factor in learning).
...Illustrations, pictures, diagrams, articles, should be utilized whenever possible.
...BE CREATIVE

12. Review (Where & When needed)-
13. Post-test and (evaluation/suggestions)
14. Additional suggested Follow-up Activities (for those who study this packet and who desire to pursue this topic further).
15. Bibliography (Books and materials) (films, filmstrips, programmed materials, transparencies, slides, tapes, etc.).
16. Suggestions for the teacher (Instructions and guides if needed).
17. Appendix (Materials which enhance the Packet and add to its effectiveness).

NOTE: The packet should be typed and mounted in a labeled cover (portfolio type).

REMEMBER: THIS PACKET IS TO BE USED AS A BUIDE FOR INDIVIDUAL INSTRUCTION

and in many cases....

IT WILL BE THE GUIDE TO AN OVERALL CORREALTED PACKAGE OF LEARNING AND REFERENCE MATERIALS.

EASTERN WASHINGTON STATE COLLEGE
Department of Education

TITLE AND/OR PACKAGE NO.

CONCEPT: This should be a specific statement of the idea, skill, or attitude to be learned. One sentence is usually sufficient.

PURPOSE: This is a rationale to the student indicating why the above concept should be learned. A brief paragraph is usually sufficient.

LEARNING OBJECTIVE: The learning objectives should be stated in behavioral terms and contain three basic elements:

1. The performance expected of the learner.
2. The conditions under which the performance will take place.
3. The proficiency level expected of the learner.

Objectives should include a range of taxonomy categories: knowledge, comprehension, application, and invention. The number of objectives is determined by the producer. One to five objectives are adequate for a package. Behavioral objectives are concept oriented and should not include material from the learning activities.

Pre-Assessment

LEARNING ACTIVITIES: This is a listing of the activities a student may engage in to learn the above stated objective. The activities should be diversified as possible and provide for a broad range of interest and ability levels.

Areas to consider are:

Materials:	Textbooks, periodicals, pamphlets, experiments, worksheets, exercises, charts, etc.
Media:	Films, filmstrips, records, tape recordings, 8mm single concept loops, video tape recordings, study prints, etc.
Methodology:	Large group where media is used, small group, teacher-pupil conference, research in the learning resource center, etc.

EVALUATION OF STUDENT LEARNING:

The evaluation instrument should measure a student's achievement of the behavioral objectives. The degree to which the student has gained an understanding of the idea, skill, or attitude which was to be learned, determines his advancement.

Two tests should be prepared for each package. The instructor in his course management, can use the evaluation instrument in several ways. They may be used as a pretest, self-test, post-test, or as two post-tests.

HOW TO DO A PACKET

Name ______________________________

Seminar Teacher____________________

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PURPOSE:

The purpose of this packet is to introduce you to a new method of learning. This method allowing you to learn as fast or as slow as you want because you are the boss. Each page of this booklet will give you instructions and explain what you are to do. In order to complete the packet successfully you must follow the directions.

WHETHER OR NOT YOU SUCCEED DEPENDS ON YOU. IF YOU HAVE QUESTIONS PLEASE DO NOT HESITATE TO MAKE AN APPOINTMENT WITH YOUR SEMINAR TEACHER.

Now turn to the next page and continue the packet.

INTRODUCTION:

During the past ten to fifteen years teachers have discovered many things about how people learn. The two most important discoveries have been: (1) that people learn at different rates of speed, and (2) that people learn in different ways. Consequently, during this year of study in the culture of the western world we are going to provide you with an opportunity to learn at your own rate of speed and in your own individual ways. This can be achieved only through a combined and cooperative effort between you and your teacher.

The procedure we are going to use this year involves the use of individual learning packets. Each packet will enable you to learn a specific concept concerning the growth of civilization. However, before we begin our course it is important that you understand how to do a packet. Since the best way to learn to do something is to do it, let's begin.

PACKET LEARNING CAN BE EASY IF YOU FOLLOW DIRECTIONS

NOW TURN TO THE NEXT PAGE AND BEGIN

GONCEPTS:

1. Learning is an individual process.
2. A pre-test is provided in each packet to determine whether a person needs to complete the packet.
3. Concepts of the material to be covered are stated clearly.
4. Objectives are stated in behavioral terms.
5. Varying activities are provided to enable the student to master the objectives.
6. When the student is able to perform the objectives he is ready to take the post-test. If he cannot perform the objectives he needs to return to those items he does not understand.

LEARNING BEGINS WHEN THE TEACHER STOPS TALKING

TURN TO NEXT PAGE AND READ THE OBJECTIVES OF THIS PACKET

OBJECTIVES:

Each student should be able to do or perform the following tasks:

1. To be able to write a definition of the following terms as they relate to individual learning packets.

   A. Concept
   B. Behavioral Objective
   C. Pre-test
   D. Post-test
   E. Resource Center
   F. Independent Study

2. To be able to explain in writing why you think the packet is a good learning instrument.

3. To state in writing a concept with which you think other people should be acquainted.

4. To be able to state in writing three behavioral objectives which if a person could perform them - would demonstrate an understanding of your concept.

5. To be able to explain in writing the reason for having a pre and post test.

6. To be able to identify when a person is ready to progress to the next unit or packet.

7. To be able to score 90% on the post-test.

IF YOU THINK YOU CAN PERFORM THE ABOVE OBJECTIVES, TURN TO THE NEXT PAGE AND TAKE THE PRE-TEST.
IF YOU DON'T THINK YOU CAN PERFORM THE TASKS - TURN TO THE NEXT PAGE, READ THE PRE-TEST AND THEN BEGIN THE PACKET ON PAGE 7.

Pre-Test

Write a short definition of the following terms:

Concept:______________________________

____

Behavioral Objective:______________________________

____

Pre-test:______________________________

____

Post-test:______________________________

____

Resource Center:______________________________

____

Independent Study:______________________________

____

2. Why do you think the packet is a good learning instrument?

____

____

____

3. Write below a concept that you think other people should know.

____

____

____

4. Write below three behavioral objectives which if a person could perform them - would demonstrate an understanding of the above concept.

Pre-test (continued)

5. Explain the reason for having a pre and post test.

6. Below are two possible situations a person might find himself in when doing a packet. Explain in writing the next steps you would take.

You have just finished the pre-test. ______

You have just found that one of your student's score on the post-test was not satisfactory. What advice would you give him?

When you have completed the pre-test take it to your seminar teacher.

If your teacher checks item number one you can go on to the next packet, if item number two is checked then you will go on with this packet.

(1) Go on to next packet ______

(2) You are now ready to begin this packet ______

BODY:

You are now ready to begin your first packet. There are a few important ideas that you must remember: (1) follow the directions, (2) you are responsible for learning, and (3) whenever you need assistance, see your seminar teacher. Good Luck!

Our first task in this packet is to become familiar with the basic vocabulary of a packet. You will find below a list of words and their definitions that we will use all year. Read them and be sure that you understand each word. If the explanation is not clear see your seminar teacher.

1. Concept: Each packet is based on one learnable idea or concept. All the activities and reading are provided to help you understand the idea.

2. Behavioral Objectives: Each packet includes behavioral objectives or statements telling the student what he will be required to do to show the teacher and himself that he has understood and learned the concept. The objectives tell the student what he will be required to do.

3. Pre-test: All packets have a pre-test that the student may take. The pre-test enables the student and the teacher to determine whether or not the student already understands the concept to be covered. If the student already understands the concept then he would be wasting his time doing the packet. However, if he does not understand the concept, the pre-test serves as a good introduction to the packet.

4. Post-test: Each packet concludes with a post-test which each student must take. The post-test will always ask you to perform the objectives that were stated earlier in the packet. Usually each student must score 90% on the test. If a student does not score 90% he has not followed the instructions in the packet.

5. Resource Center: The Social Studies Resource Center will contain all the packets, post-test and most of the reading materials needed to complete the packets. Since seminar and large group times are not used for doing packets you will need to spend much of your independent study time reading and working in the Resource Center.

6. Independent Study: Each student at Ferris has independent study time. Most of the readings, tapes, filmstrips and other activities you will be asked to complete will be done during your independent study time.

THINK ABOUT THE WORDS. IF UNDERSTOOD GO ON TO NEXT PAGE.

Now that you have read the vocabulary words you will need to understand this year, let's see if you can put some of them to use.

In the spaces provided below state in writing three concepts which you think are important. (Remember that a concept is one learnable idea.)

1. ______________________________

____

____

2. ______________________________

____

____

3. ______________________________

____

____

When you have finished, reread the definition of a concept on page __7__. If you think your concepts are correct and acceptable go on to the next page. If you are not sure if your concepts are right see your seminar teacher.

DON'T GIVE UP - STOP AND THINK - IT'S ALL IN THE PACKET

The next thing you should understand about the packet is the "objective."

As you remember for the definition on page __7__ of this packet, an objective tells the student what he will be required to do in order to demonstrate his understanding of the concept. The objective is stated in action words such as: List, Identify, and Compare.

To make sure you understand the objective we would like you to list below three behavioral objectives which relate to one of your concepts listed in the previous section.

1. ____

2. ____

3. ____

After you have completed writing your objectives, check yours with the objectives included in this packet on page __4__.

Were yours correct? If not, read the section on objectives located on page __7__.

IF THEY WERE CORRECT, GO ON TO THE NEXT PAGE.

We would now like you to reread the definition of a pre-test. When you have finished, state why you think the pre-test is a good or bad idea.

Now that we have reviewed all the aspects of the packet, see if you can explain what you would do in the following situations.

1. A student has come to you with his completed packet but it is identical to another student's and was obviously copied. What would you say to him?

____

____

____

2. One of your student's post-test was 100% correct except for one question, which obviously he had just guessed at. What advice would you give him?

____

____

____

When you have completed the packet go to the Social Studies Resource Center and ask for the post-test on the "Packet" and take the test. When you have finished return the completed test to the person in charge of the Resource Center.

GOOD LUCK

POST-TEST

1. Define the following terms as they apply to individual learning packets.

CONCEPT: ____________________

____

BEHAVIORAL OBJECTIVE: ____________________

____

PRE-TEST: ____________________

____

POST-TEST: ____________________

____

RESOURCE CENTER: ____________________

____

INDEPENDENT STUDY: ____________________

____

2. Now that you are about to complete your first packet, how do you feel about the packet?

____

____

____

Post-Test (continued)

3. State below a concept you think other people ought to know:

4. State below three objectives which relate to your concept in question three.

5. How do you think taking both pre and post tests will help you understand and learn the material we are going to cover this year?

6. If one of your students scored 40% on his post-test, what advice would you give him?

SECTION VIII

VIDEO PAPER I

OPINIONS ON CREATIVE LEARNING AND TEACHING

E. Paul Torrance
Department of Educational Psychology, University of Ga.

This booklet contains 60 fairly common statements concerning creative learning and teaching. This particular form of the opinionnaire was designed for high school teachers and others who work with adolescents. Please answer in terms of your own personal and professional experience.

By using the answer sheet provided, indicate your reaction to each statement by blackening the appropriate column for each statement, using the following key:

1 Strongly agree
2 Agree
3 Undecided
4 Disagree
5 Strongly disagree

****

1. Students should be rewarded only for giving the correct or best solutions.
2. When a student gets an idea that no one else has thought of he should keep it to himself.
3. Teachers should at times encourage students to think of wild ideas.
4. Wild ideas frequently turn into good ones.
5. Some people are naturally born to be better problem solvers than others and there is nothing teachers can do about it.
6. Thinking of ideal or dream solutions, even if they sound ridiculous, can lead to useful ideas.
7. Teachers should encourage students to accept the ideas approved by the majority of the class.
8. Productive, creative thinkers frequently spend time on wild ideas.
9. Teachers should not spend time in class considering ideas that are wrong; it is a waste of time.
10. Most, if not all, really creative and useful ideas come from wild ideas.
11. In teaching, it is more important to help students find out what is wrong with present solutions than to think of new ones.
12. The creative problem-solving process can be used to improve solutions to just about any problem.
13. When there is a hard problem to solve, it frequently helps a great deal for a student to present an unusual idea.
14. There are important problems and gaps in knowledge in every course; students just have to learn to see them.

15. In helping a class solve problems, the most important thing a teacher can do is to help the class figure out what is wrong with the ideas suggested.

16. Students find it easy to think of good, new ideas when they know how.

17. Students should be taught to accept the solutions that the teacher thinks are right.

18. Any high school student can learn how to think of new, useful ideas.

19. Teachers should realize that some students simply cannot become better thinkers than they are.

20. A student who keeps working on a problem that no one else in the class can solve is stubborn and selfish.

21. It is all right to let students suggest several answers, but they should be taught that there is usually only one best answer.

22. If someone is not very good at thinking and solving problems by the time he reaches high school, then it is too late.

23. It is not fair for a teacher to give students problems that cannot be solved by using rules that everyone knows.

24. In solving most problems, it is best not to know too many facts; otherwise there will be confusion.

25. It is not fair for a teacher to give students problems that keep them thinking of new ideas in order to solve them.

26. Students can learn to read and do mathematics, but they cannot learn to think better or get better ideas.

27. If students are not able to solve a problem after a few minutes, the teacher should recognize that it is too hard for the class to solve.

28. Frequently students are fascinated by new ideas, whether or not they have practical value.

29. Teachers should at times encourage students to work on a problem that they might not be able to solve.

30. It is not healthy for a high school student to become enthusiastic about an apparently simple thing.

31. Teachers should at times encourage students to try out a hunch just to see what will happen.

32. It is healthy for a student to become "lost to the world" when he gets started on an original idea.

33. Teachers should never pay much attention in class to "crack-pot" ideas.

34. The presence of a group stimulates many students to think of original ideas.

35. Teachers should help young people recognize that it is impossible to solve many problems.

36. It is not healthy for a student to question things that other people regard as established facts.

37. Teachers should realize that it is hard for a high school student to work intently on a problem for more than an hour or two at a time.

38. When a class sets out to solve one problem they may get an idea that leads them to something else quite worthwhile.

39. It is better to explain a principle or theory to students rather than to encourage them to understand it on their own.

40. The unfinished or imperfect usually has greater appeal for students thanthe completed and the polished.

41. Examinations composed of factual questions are more valid than those requiring organization, interpretation, or creative thinking.

42. It facilitates important learning for students to try to imagine or visualize things they cannot actually see.

43. High school teachers should make assignments that require original research work.

44. High school students sometimes get rebellious ideas but as they grow up they should get over them and settle down.

45. Sometimes students learn a great deal when things are uncertain and unpredictable.

46. Students should be more interested in learning facts than in relating them to their ideas and previous experiences.

47. Teachers should give high school students assignments which require them to draw their own conclusions from some data or a body of facts.

48. Most high school students enjoy discussing causes and possible solutions of social, political, economic, or international problems.

49. Teachers should frequently permit or encourage two students to work on problems together.

50. Students will work longer on problems in pairs than alone or in regular classroom groups.

51. Straightforward reasoning is more productive than metaphors and the search for analogies.

52. Teachers should recognize that the idea of doing research appeals to most high school students.

53. In producing useful, really original solutions, the irrational and emotional is more important than the intellectual and rational.

54. Teachers should encourage students to question the accuracy of statements made in textbooks or reference books.

55. Students do not enjoy working on a problem unless there is a good possibility of coming out with a clear-cut answer.

56. It is the responsibility of teachers, especially social science teachers, to help maintain the established order of society.

57. High school students enjoy thinking about problems that challenge the experts.

58. It is essential for learning that a teacher outline in detail what is to be done and how to do it.

59. Students' minds may get so caught up in a new idea that it is almost impossible for them to think of anything else.

60. A teacher should not attempt a class project unless he has a pretty good idea how it will turn out.

VIDEO PAPER II

A REVIEW OF SELECTED LITERATURE ON CLASSROOM CREATIVITY

by

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Research studies referred to in this survey of the literature were selected by virtue of their relationship to the study, scientific prominence, and/or as important contributions to knowledge in the area of creativity. The literature has been arranged into seven topic areas: (1) defining creativity; (2) creative teaching and the curriculum; (3) the nature of the creative personality; (4) the creative learning process; (5) sociological implications of creativity; (6) creativity and school performance; and (7) the measurement of creativity.

Defining Creativity

One of the most common problems in dealing with the field of creativity has been the many definitions of the term. The multitude of definitions has made communication within the field of education difficult. Taylor[1] has described better than one hundred definitions of the term.

The definitions of the term creativity selected by this researcher cover a wide spectrum of interpretation. Some writers have used the term rather loosely, while others have defined a rather tight framework of operation. Some were concerned with the psychological process almost entirely, while others concentrated on the relation between man and his environment.

Anderson[2] referred to the term creativity in two phases. He set up the dichotomies of the open system and the closed system. The closed system has very little emphasis on inventiveness or originality but is

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concerned mainly with acquiring a body of knowledge, memorizing facts, and finding answers to problems that have already been solved by someone else.

His open system is a system of relationships which stress uniqueness and originality in the thought processes. The greatest opportunity for operating or learning in the open system is at the infant stage of development and preschool years where there are few environmental and curriculum demands, and almost no systematic teaching. It is at this level that the most significant learning takes place and creativity flourishes. This type of open system permits originality, experimentation, initiative, and invention.

In defining creativity further, he indicated that the term has two parts. Usually it has been thought of in terms of a product, such as a painting, an invention, or a novel. However, there is also the process of creativity which exists only in the moment of now.

Yammamoto[3] expressed frustration when he was unable to find commonly accepted definitions of the term. He felt that the reason for which men could not arrive at conclusions about the term they were feeling was because of the philosophical differences among the workers in the field. He considered this the reason rather than the differences in degree of sophistication or in the type of technique. The operational frame of reference was the most important factor in determining what the worker actually found.

Kubie[4] discussed the term within a psychological framework dealing with his concurrent systems of conscious, preconscious, and unconscious. Man's greatest flexibility and freedom occurs when continuous interaction occurs between the three systems.

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To Kubie,[5] the unconscious level was the area in which symbols became disguised and disguising representatives of the unconscious levels of psychological processes. The process of symbolic funcitoning is latent. It merely hides and there is no communication with the pre-conscious. He felt that the unconscious processes were rigid and fixed. The pre-conscious was where the acts of creativity occurred. It was at this level that the symbols underwent a continuous operation of sorting, sifting, analyzing, and processing. In the conscious level, the learner deals with knowledge as realities. Like the unconscious, the conscious is also fixed and rigid. The process of creativity was described by Guilford:

> The creator first makes preparation. That is to say, he collects information, although he may or may not have a clear idea of what he is going to produce. He next goes through a period of incubation during which the great idea to come undergoes a process of gestation. The big moment of inspiration arrives and the idea is born. To finish the job, the creator indulges in some self criticism; he evaluates what he has produced.[6]

Jackson[7] stressed the criteria of unusualness and appropriateness. The product must stand the test of reality. It must fit the content of "make sense." He further indicated that the criterion of appropriateness is continuous and not discrete; exists in degrees. A third criterion was transformation which involves a radical shift. An example given of this process was the drastic shift caused by the introduction of the heliocentric theory of the universe which placed the sun rather than the earth at the center of our universe.

A similar approach was taken by MacKinnon[8] who characterized creativity, and statistically infrequent response. He felt that there would also be an element that would be adaptive to reality and contain "an evaluation of the original insight together with sustaining and developing it to the full."

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These two definitions of Jackson and MacKinnon both stressed the importance of the final evaluation process which would bring the creative product within a workable framework.

Nelson[9] pictured creativity differently. She conceptualized it as a means-end relationship where the creative process is the means and the individual or creative product the desirable end. She indicated that in this type of conceptualization, a symbolic relationship was implicit. This was likened to the manner of judging the value of a creative endeavor in terms of it's qualities or characteristics. This approach to judging would reflect the authors, artists, or scientists' attitude during the process of creating. In this context, however, originality, spontaneity, and vision had to characterize both the process and product of creative thinking.

Creative Teaching and the Curriculum

The ASCD 1962 Yearbook Committee[10] discussed ten noncreative influences which they felt prevented America's schools from encouraging creativity:

1. "A Preoccupation with order. Much of our practice seems to worship order, categoization, classifying, description and pigeonholing of one sort or another. Such a preoccupation is likely to discourage breaking loose and finding new solutions."

2. "Overvaluing authority, support, evidence and the 'scientific method.' Such rigid, tight concepts often permit no question or exploration. They are by definition, 'so.'"

3. "Exclusive emphasis upon the historical point of view. This seems to imply that those things that have been discovered in the past are always good; change or the present is bad."

4. "Various forms of 'cookbook' approaches - 'filling in the blanks,'

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'color the picture correctly' approach. This is an ever-present danger of teaching machines, also, if they permit only 'given' answers."

5. "The essentially solitary approach to learning often emphasized in some classrooms - creativity is very highly dependent upon communication."

6. "The elimination of self from the classroom."

7. "The school which is ruled almost entirely by adult concepts."

8. "Emphasis upon force, threat, and coercion. The use of 'guilt' and 'badness' as means of control; also severe forms of punishment, ridicule, and humiliation. Anything which diminishes the self interferes with openness and creativity."

9. "The idea that mistakes are sinful and that children are not to be trusted. Where mistakes are not permitted, there can be no experimentation. Teachers who fear youngsters and the possibilities that they may get out of hand cannot permit the kind of movement and freedom required by creativity."

10. "School organizations which emphasize lock-step approaches, rules and regulations, managerial and administrative considerations, rather than human ones."

The ASCD 1962 Yearbook Committee[11] also indicated that the development of creativity was dependent upon the types of school situations created by teachers and administrators. The Committee felt that creative behavior often had it's beginning in sheer phantasy. It was up to teachers to make their classroom a place where brainstorming, imagination, and even day-dreaming were encouraged. It was felt that regardless of how fantastic ideas may seem, they must not be ridiculed.

Belief was also expressed that ideas must be expressed without fear of threat. This should occur not only in the classroom, but in the

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corridors or the playground also. Imagination must be tolerated and more important, encouraged. In short, the school atmosphere should be one where shcool is thought of as being fun.

The Committee also indicated that maximum opportunities for choice must be provided. This was deemed necessary if students were to escape a feeling of threat when confronted with problems they did not feel competent to cope with. Differences and flexibility should be made possible in order to encourage creative behavior.

The ASCD 1962 Yearbook Committee[12] felt that teacher attitudes must be such that an atmosphere for creativity is encouraged in their classrooms. Teachers must value openness and flexibility, and understand the importance of individuality and it's development in each child. Learning activities should be structured through the use of free discussions, open ended questions, the use of varied sources of information, opportunities to question established theories, and to think critically and challenge beliefs which are widely accepted. Over-planned activities, page-by-page assignments, and rigid schedules leave little room for tackling crucial questions through discussion.

The ASCD 1962 Yearbook Committee[13] cautioned that creative teaching was not easy. It demands a complete reconstruction of learning activities and methods of classroom operation. The emphases in schools which encourage creative thinking must be focused on the child rather than on rigid subject matter.

While there seemed to be agreement among teachers that qualities of resourcefulness, critical thinking, and creativity were important to education, Margolin[14] found that not all teachers were willing to work with

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pupils who had such qualities. The pupil who tended to be critical during a discussion was not the kind of pupil who made a teacher's day easy.

Wolf[15] studied the question of the classroom teacher's view of the creativity concept. The responses of teachers were grouped categorically according to four manifestations of creativity. In answer to the question of how teachers viewed the concept of creativity it was found that nearly 50 percent felt that it was a personal characteristic rather than a product or a process. Sixty percent felt that creative learning experiences as used in the classroom were the type of experiences which already pervaded the entire school curriculum. Sixty-seven percent of the teachers felt that the main reason for employing practices of creative learning experiences was to expedite specific learning and/or instruction in the classroom. The remainder felt that the purpose was more for enjoyment and satisfaction.

When asked their opinion as to the desirable outcomes from creative learning experiences, Wolf[16] found that 33 percent felt that improved socio-personal adjustment improvement factors were most important; 30 percent thought that improved instruction which would facilitate learning was most important; 10 percent saw the most valuable outcome as being the development of new vistas for self-expression and use of leisure time; while 14 percent were of the opinion that the greatest importance was in the realization of personal satisfaction and a feeling of accomplishment.

Wodtke[17] found that there was less slef-initiated talk in the classroom on the part of highly creative students than those in the low creativity categories. Pupils of highly controlling teachers, and the high creative pupils seemed more alert. There was no support for the hypothesis that

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highly creative pupils tended to become classroom discipline problems. The overall findings showed that highly creative youngsters who were in the classrooms fo teachers with a high degree of control found that they must curtail their verbal creativity, self-initiated response, and verbal flexibility.

It was found that the type of student which teachers and parents conceived of as being ideal, was not the kind of pupil which might be described as a creative person. A Getzels and Jackson[18] study found that in a test of desirable traits in students, independence in judgment ranked 19th while being courageious was ranked lower by United States Teachers than by teachers of any of the six foreign countries for which data was available. These countries included: Canada, Australia, Germany, Western Samoa, and the Phillipines.

Research by Torrance[19] revealed ten personality characteristics of teachers who were not able to apply five basic principles of classroom operation which rewarded creative thinking. These personality characteristics were: authoritarian, defensive, dominated by time, insensitive to their pupils' intellecutal and emotional needs, intellectually inert, lacking in energy, preocuppied with the information - giving functions, disinterested in promoting intelectual curiosity in their pupils, preoccupied with disciplinary matters, and unwilling to give much of themselves in the teaching-learning compact.

Torrance[20] conducted another experiment in which 212 first, second, and third grade children were administered three product improvement tasks consisting of improving a nurse's kit, a toy fir truck, and a stuffed dog. It was found that first grade boys were reticent to suggest changes for the

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nurse's kit, while the girls were similarly reluctant to offer suggestions for changing the fire truck. However, by the third grade, boys were found to be clearly superior to girls on the number and quality of ideas for the change and/or improving of the three toys used in the study.

Finally, at the conclusion of his revised summary report, Torrance[21] arrived at a number of conclusions dealing directly with creative teaching:

1. "After an orientation such as that contained in the manual, Rewarding Creative Thinking, classroom teachers seem to want to reward creative thinking in their pupils, but many of them are unable to do so effectively because of their own personality characteristics, their perceptions of social expectations, and the like."

2. "In projecting plans for discussing with children their creative writing, beginning teachers seem to be preoccupied with the critical and remedial. When encouraged to develop strategies for talking with children which will encourage growth in creative writing, experienced teachers show a slight predominance of creative strategies over the critical and remedial."

3. "Teachers participating in inservice training programs for developing creative thinking, tend not to initiate any more creative activities than their colleagues under control conditions, but there is a fairly general tendency for their pupils to show greater growth in creative writing."

4. "Pupils of teachers with strong creative motivations or attitudes (as measured by appropriate scales on the Personal-Social Motivation Inventory) show significant gains in creative writing over a three-month period, while those of their less strongly motivated colleagues showed almost no gain in creative writing under similar conditions during the same period."

5. "Even though teachers may volunteer to carry out creative thinking

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activities, they tend to be inhibited in doing so if the principal is not involved in the experiment and does not give his direct approval."

6. "The use of creative activities in and of themselves does not seem to result in growth in creative writing."

7. "Boys and girls in the subcultures studies are rewarded differentially for their creative thinking and this appears to interfere with the creative development of both boys and girls in certain areas."

8. "Differential rewards for originality versus correctness and for originality versus fluency produce differential results in the expected directions."

9. "The type of evaluated practice (criticism and correction, suggestions of other possibilities, and a combination of criticism and constructive possibilities) do not affect performance on similar subsequent tasks requiring creative problem-solving. Too frequent use of evaluation during the practice session, regardless of the type, seems to interfere with subsequent performance on similar tasks."

10. "Unevaluated ('off the record') practice tends to produce greater originality, elaboration, and sensitivity than evaluated practice in most instrances, except at the sixth-grade level."

11. "Wehn peer evaluated practice is used, creative evaluation (defects) tends to be more effective in producing originality, elaboration, sensitivity, and the like, especially in the fourth, fifth and sixth grades."

12. "Competition in grades one through six produces greater fluency, flexibility, and originality in creative thinking tasks. Practice and 'warm-up' reduces but does not completely eliminate the advantage achieved by competition. (This does not include an assessment of other side-effects of competition.)"

13. "If one member of agorup is definitely superior to the others in creative thinking abilities, he almost always experiences pressures to reduce his productivity and/or originality and is frequently not given credit for the positive contribution he makes to the group's success. The repertoire of gorup strategies for controlling creative members and of the counteraction techniques of creative individuals can be identified and used in characterizing the evaluative conditions of a group."

14. "Homogeneous grouping for tasks requiring creative problem-solving reduces the social stress, enables less creative members to become more productive, and increases the enjoyment of members."

15. "More effective teachers in experimental mathematics courses (SMSC) report more trouble-shooting or hypothesis-making evaluative thinking and less criticism and praise than their less effective colleagues, effectiveness being determined by pupils learning as measured by pre- and post-tests."

16. "Preadolescent children in different cultures perceive differently the pressures of their society on divergent characteristics as shown by their imaginative stories about animals and persons with divergent characters. Approximately one-half of them perceive some kind of pressure against divergent characteristics."

17. "Students who read and analyze research creatively in terms of constructive possibilities rather than critically in terms of defects subsequently develop more original ideas in the area of the content under consideration. This suggests the improtance of the evaluative set one has towards the knowledge he possesses."

18. "Different evaluative sets (memory, evaluative, and creative) in reading course material (Personality Development and Mental Hygiene) leads to differential performances on different kinds of tests (recognition or multiple-choice, memory or completion, creative applications, and evaluative or decision-making), again suggesting the importance of the evaluative attitude toward knowledge in creative writing."

20. "Provisions in honors programs for slef-initiated learning appear to be increasing while credit being given for self- initiated learning (in a course in Personality Development and Mental Hygiene) seems to increase greatly the variability of what is learned and probably of how much is learned. Most graduate students,though not all, are able to make good use of such opportunities.

The Importance of Encouraging Creativity in the Classroom

Eric Fromm[22] emphasized the importance of organizing classrooms to encourage the creative attitude in the children. He saw creativity as "an attitude toward the self and toward the world in general; a willingness to accept the novel, unique, fresh, unexplored areas as a challenge, not a threat." He felt that in order for creativity to flourish it was necessary for children to be puzzled, to accept conflict, to concentrate, and to devleop the sense of "I as the true center of my world." Fromm's ideas, like those of Torrance, seemed to indicate a need for much re-organization of classroom instruction.

An element of threat was suggested in the findings of Eisenmen[23] who indicated that there was a great need for teahcers who could teach creatively, that is, persons who wouldn't be threatened by students who might disagree with them. In fact, it was hoped that teachers would welcome such disagreements by creative students who might have the ability to present the teacher with more creative approaches to his subject matter. In this relationship, it would be possible for mutual enhancement of creativity to occur.

The importance of encouraging students to ask insightful questions was also mentioned by Eisner[24] who agreed with Eisenmen that ti was necessary for a classroom to be free from threat before creativity could flourish and that a classroom which encouraged fear of failure also possessed a high level of anxiety in students. This high anxiety, diminished performances, expecially in complex tasks. Thus, creativity would be stifled.

Torrance[25] drew a dichotomy between creative teaching and authoritarian teaching. He indicated ath many things could be taught more effectively and economically if learned in a creative manner and that many students who made little progress when taught authoritatively show gains when taught creatively. He also felt that this sort of classroom instruction could be effectively applies to teaching school failures and dropouts.

In another article Torrance[26] took issue with educators who maintained that too little is known about creativity to offer any practical suggestions for ways in which teachers could encourage creativity among students. He offered six suggestions for encouraging creativity in the classroom:

1. "Recognize original, creative works."
2. "Ask questions that require thinking."
3. "Reduce the discontinuity between elementary and secondary schools."
4. "Provide more opportunities for learning in creative ways."
5. "Do something about individual differences."
6. "Develop creative readers."

Creativity in reading and social studies. In a separate study Torrance[27] determined that there is a significant role for creative think-

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ing in the process of reading. He also demonstrated the importance of developing creative readers by showing that children could be educated to a much higher level if teachers would teach them how to utilize their creative thinking ability in reading.

Marksberry[28] felt that it is possible to promote creative behavior in the social studies. However, before this cna be done, it is first necessary to place more emphasis on discovery techniques of learning rather than on the traditional repetitive method of fact memorization. To accomplish this, a supportive classroom climate is necessary to emphasize both individual and group exploration and experimentation. This supportive climate is one in which ample opportunities for original thinking, problem solving, and honest appreciation of creative behavior are provided. However, the author added that creative behavior must have intellectual merit. Marksberry deemed it necessary for the teacher to recognize and have respect for various individual differences and unique ways of learning and responding by their students.

Castelli[29] was in agreement with Marksberry regarding the need for the teacher to assume a supporting role to students. He found that teachers who scored high on tests of divergent thinking had a greater tendency to exhibit behavior of a supportive nature. Castelli also found that creative teachers who he depicted as those scoring high on tests of divergent thinking, seemed to be more hostile toward their students than the non-creative teachers. However, they tended to praise and smile more, while at the same time blaming and frowning more. They also seemed to jump from one statement category to another in their teaching more than the less creative teachers.

Creative counselors and administrators. Along with the need for creative teachers in the curriculum.Torrance[30] discussed the type of counselors

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and administrators needed for guiding and directing the creative talent of students. He described two types of counselors which he felt would not qualify for counseling highly creative individuals. He believed that a counselor too engrossed with his own creativity might be ineffective in helping his counselees to become more creative themselves. This sort of counselor could completely upset the creative thinking ability of his counselee. He might demonstrate impulsiveness by his inability to contorl his responses in counseling interviews. Torrance's second type of counselor was quite the opposite of his first type. He would be rigid, constricted, overly dedicated to method and technique, and lacking in spontaneity. He would feel the need to repress all his weaknesses. Torrance characterized these two types as being creative personalities who would be able to work successfully with only a very few highly creative individuals.

Torrance[31] also indicated that a counselor of highly creative individuals should have control of his impulsiveness, but he must also develop an ability to use his preconscious, to play, to laugh, to be spontaneous, and to accept weaknesses in hemslef. He should be able to free himself of his rigidity while maintaining his slef control, his contact with reality, his organization, and he should be capable of exercising cautiousness and carefulness.

One important quality for counseling with the highly creative individuals is a large degree of openness. He must have seen perceptive abilities to truly communicate with his client. He must also be trained in intuitive thinking.

Torrance[32] described a number of characteristics of the creative school administrator. He felt that by encouraging certain school practices,

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the school administrator could encourage the development of a climate for creativity within his school:

1. "Lets teachers know that he respects creativity and creative teaching."
2. "Uses some regular system for obtaining teachers' ideas."
3. "Tolerates disagreement with his own ideas."
4. "Encourages experimentation."
5. "Avoids loading teachers with too many extra duties."
6. "Makes it possible to try out new ideas without failure being 'fatal.'"
7. "Makes school atmosphere an exciting, adventurous one."
8. "Avoids overemphasis on teamwork."
9. "Holds meetings in which ideas are evaluated honestly."
10. "Helps develop sound but exciting ideas from failure experiences."
11. "Exposes teachers to the creative work of other teachers."
12. "Makes it easy for new teachers to generate new ideas and stimulate the staff."
13. "Facilitates communication between teachers in his school and teachers elsewhere working on related problems."
14. "Occasionally questions established concepts and practices."
15. "Carries on concinuous programs of long-range planning."
16. "Recognizes and tries to relieve tension when frustration becomes too severe."
17. "Maintains frequent communication with individual teachers but lets them make most decisions alone."

Finally, Torrance also indicated five behavior characteristics of a creative administrator:

1. "He is a man of curiosity and discontent. He is always asking, 'Why did this happen?' or 'What would happen if we did it this way?'"

2. "He is a man of unlimited enthusiasm for his job. He is restless, intense, strongly motivated -- completely wrapped up in what he is doing."

3. "He is a man with the talent of transmitting his enthusiasm to his associates. He creates an atmosphere of excitement and urgency."

4. "He is flexible. He keeps an open mind and is willing to accept and use new information. He listens to new ideas and does not flatly dismiss ideas with 'Don't be ridiculous' or 'We tried that before.'"

5. "He is unorthodox and boldly questions conventional ideas. He is goal-oriented, not method-oriented. He is willing to pay the price in physical and mental labor to achieve goals and is impatient with anything that gets in the way."

Creativity and problem solving. A number of studies have attempted to determine the relationships between creativity and thinking and/or problem solving skills. Hutchinson[33] studied the changes which occurred in children's thought processes when changes and modifications in presentations of subject matter were used with seventh grade students, some of the findings and conclusions were:

1. "In the typical seventh grade social studies classroom, verbal responses tend to be found in the cognitive-memory classification. The traditional class was geared to the students with the high I.Q. By modifying the procedures of instruction to consider the student as a thinker as well as a learner, a wider range of responses was elicited. In contrast to the instruction of the control (traditional) groups, it was found that the instruction in the experimental groups was more nearly geared to the full range of mental abilities."

2. "Modification of instructional procedure resulted in better achievement for the experimental groups over the control groups. Students were able to experience a wider range of intellectual activity while learning subject matter and at no expense of learning the subject matter."

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3. "Growth on measures of creativity for the experimental groups was significantly greater than the growth for the control groups on four of the ten measures, with no significant difference for the other six measures."

4. "Students who measure high on the creativity tests did not have much of an opportunity to use their creative potential in the typical control classroom. When the opportunity to be more creative and productive in the classroom was present, the number of significant correlations increased two to one in favor of the experimental group. The teacher was the controlling factor in determining who responded depending upon how the teacher perceived the students and to whom the teacher geared the instruction."

5. "There was a positive relationship between mental ability and creativity. Yet, there were many students who have high mental ability but did not produce creatively. Conversely, there were many students who produced creatively, but did not necessarily have a high I.Q. Productive thinking followed a similar pattern."

6. "Boys produced more creative and productive thinking responses than girls."

In an experiment conducted with fifth grade students, Reyburn[34] investigated whether divergent thinking ability could be taught through the use of oral and written language. The data revealed that a training course was capable of raising the originality and ideational fluency scores above those expected by practice. The study showed that divergent thinking abilities and creative production could be expected when efforts were made to achieve this end.

Other findings showed that teacher-growth, as well as student growth, occurs in terms of tolerance for divergent thinking and creative production. It was also demonstrated that the development of divergent thinking abili-

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ties and creative capabilities could be developed.

Gray[35] compared the results of two classes which received instruction in ninth grade health under two different methods; a problem-solving approach and a traditional approach. He found that the problem-solving approach resulted in more spontaneous class participation and more interest for students in these classes than those taught under the traditional method. He also found that the problem-solving approach enabled students to learn critical thinking and a logical approach to controversial subjects without detracting from the attainment of factual knowledge. The same study also pointed out that the use of such a problem-solving approach required more teacher preparation than was necessary to teach under the traditional approach.

A similar study was undertaken by Fossein[36] comparing the effects of three teaching methodologies on the development of problem-solving skills of sixth grade youngsters. It was concluded that students trained in the use of inductive procedures exhibited characteristics of effective problem-solving behavior more often than pupils taught by the deductive method.

Parnes and Meadow[37] studied the effects of brainstorming techniques on creative problem-solving. Their findings indicated that instruction in the use of brainstorming was an effective method for increasing the number of productive ideas in a creative thinking problem, and that its effectiveness could be increased through the means of extensive training in its use. The same study also revealed a positive correlation between the quality and quantity of ideas. They further concluded that many ideas are inhibited by individuals who have a feel of being censured by others.

General principles of creative teaching. Stone[38] developed the following guide of general principles of creativity-in-teaching for use in the elementary school social studies program:

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1. "Creative expression has both social and personal significance and should be fostered in the elementary school."

2. "All Children are capable of creative expression to some degree."

3. "Creativity is a complex process involving a concept of one's self and relating to one's environment."

4. "Preparation, activity, time, and flexibility of thought aid the production of a creative product."

5. "Evaluation aids the completion of a creative product."

6. "Children may show differences in both degrees and areas of creativity."

7. "An adventuring attitude incorporating effort and experience is characteristic of creative expression."

8. "Imagination is characteristic of creative expression."

9. "The creative teacher stimulates creative expression through his own attitude and example."

10. "The creative teacher utilizes learning principles to promote creative expression."

11. "The creative teacher provides experiences, concepts, and skills as a basis for creative expression."

12. "The creative teacher values process as well as product."

13. "The creative teacher utilizes problem-solving as a basis for further creativity."

The nature of the Creative Personality

Getzels and Jackson[39] conducted a study contrasting the differences between youngsters with high intelligence quotients and youngsters who scored high in tests of creativity. They found that both groups tended to rate personality traits quite similarly with one exception. The high creative

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group rated sense of humor second in importance while the high I.Q. group rated it last. This study also determined that the high I.Q. group tended to adapt behavior characteristics which they felt would please the teacher. The high creative group did not.

Kurtzman[40] found that the more intelligent a person is the more creative he is likely to be. He also found that individuals tended to be more adventurous and capable of more tolerance for ambiguity than less creative persons. The more creative individuals tended to be more extroverted and seemed to exhibit less favorable attitudes toward school.

The same study pointed out that creative boys seemed more slef-confident than less creative boys, although girls exhibited no significant differences in this area. Creative boys were more mature and had higher peer acceptance than less creative boys. However, the more creative girls were not well accepted by their classmates.

Willett[41] found that creative students had above average intelligence. He also determined that high intelligence schores did not always indicate a correspondingly high creativity score. The same study showed that high creatives demonstrated social interest, emotional stability, objectivity, and success. High creative youngsters had a need to escape the bonds of conformity and to experiment in creative learning situations. He also concluded that the highly creative individual could be a troublesome element for the classroom teacher.

However, the study of Wodtke and Wallen[42] seemed to contradict these findings. Results of their research showed little evidence for a number of generalizations concerning the classroom behavior of the creative child. High scorers on the Minnesota Tests of Creative Thinking did not indicate

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more objectionable classroom behavior than did low scorers. There was no evidence to show that high teacher control as opposed to permissiveness had a differential effect on the behavior of high creative pupils as opposed to low creative pupils.

Torrance[43] found that highly creative children exhibited a strong desire to move far ahead of their classmates and were consequently quite willing to tackle difficult tasks. He further found that three characteristics tended to serve as identification factors for highly creative youngsters: they frequently thought up wild or sill ideas; their ideas were frequently off the beaten track; and they possessed a rich sense of humor and general playfulness.

Abdel Ghaffar[44] found the creative adolescent to be both submissive and slef-sufficient and either alternately uncontrolled and lax, or self-controlled and exacting. He was good natured, easy-going, soft hearted, trustful, adaptable, and talkative. In addition he was cheerful, serene, quick and alert, and exhibited both feminine and masculine interests. Interestingly, the feminine creative adolescent had largely masculine interests although some feminine interests were apparent.

Sex differences were also mentioned by Torrance[45] who found that although girls evidenced a superiority in academic areas, boys are superior to girls in their ability to think independently, constructively, and creatively. He indicated that boys tend to become less creative at about the fourth grade level.

Yee[46] undertook a study to determine the relationship between creativity test scores and personal - social adjustment factors. Creative students of high ability were found to possess a significantly greater sense of

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personal worth and fewer anti-social tendencies than their counterparts who likewise were of similar creative ability but who possessed relatively low intellectural potential.

Yee also found no significant differences in personal and social adjustment when a comparison was made between students of similar low ability but with varied creative ability. After being exposed to techniques of creative problem-solving in an instructional program, the twelfth grade students used in the study improved significantly in social skill and in their school relations with other children.

This sense of personal worth or self-confidence identified in the creative individual might serve to explain the findings of Zirbes.[47] Her research indicated that the creative person was not easily defeated because he could find ways of salvaging even some small measure of success from an experience which might have been relatively unsuccessful.

Ginsbury[48] found some interesting relationships between high creatives and their mothers in a study which investigated childhood antecedents of creative youngsters. It was determined that boys of high creative potential were closer (but not necessarily more affectionate) to their mothers. Also, there was a greater freedom of communication between boys of high creative potential and their mothers than between boys with low creative potential and their mothers.

Daw[49] studied the life expectations, vocational needs, and choices of original thinkers and good elaborators. It was discovered that the low creatives had a greater proportion of Catholics among boys and girls. There was also a significantly greater proportion of Lutheran girls among the low creative group.

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In the same sutdy among adolescent youngsters, it was found that high creative boys tended to choose occupations in areas of service, organization, general cultural arts and entertainment, while low creative boys chose jobs in technical areas.

Finally, it was also determined that high creative boys had strong needs for compensation, moral values, and good employment practices and policies.

Torrance[50] expressed concern over the problem of maintaining fantasy in the lives of children. He indicated that it is important to keep it alive until the intellectual development of youngsters was such that they could engage in a sound type of creative thinking. He indicated that pressures against the expression of fantasy and imagination in our socieyt tended to discourage such behavior in children.

The Creative Learning Process

Moddi[51] indicated that too much emphasis has been placed on whether a creative act was new, unusual, imaginative, and broke existing precedent. He felt that more stress should be placed on its measure of value and appropriateness. He felt that one important area of consideration should be the circumstances surrounding the act of creativity. He pointed out that great creative acts did not always occur in a comfortable environment, and that many great creative acts in the history of our civilization occurred during very difficult circumstances. Specifically, he mentioned the work of Van Gogh, Christ, and Toulouse Lautrec.

Guilford[52] identified two elements which he felt were the most relevant for creative thinking. The first ability was described as divergent-production. This pertained to the fluency, flexibility, and elaboration of ideas.

Guilford's second element of creative talents was transformation abilities, where the individual produces new patterns and form by revising

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previous learning. A general characteristic of this group of talents was a readiness for flexibility. This flexibility would in turn lead to reinterpretations and reorganizations. Here, as before, the variety of transformation abilities depended upon the type of information with which the person is dealing.

In a discussion of the creative learning process. Taylor[53] suggested a three-dimensional model. His first two dimensions were student-centered, while the third was centered on teacher behaviors, mehtods, and media.

Taylor's first dimension, the knowledge dimension, concerned the student and the subject matter he learns. This dimension concerned the knowledge intake rather than the knowledge output of the teacher.

The second dimension involved two psychological processes of learning. These were identified as the cognitive and memory processes. Taylor felt that these were receiving the heaviest emphasis in school.

Out of the first two dimensions, dealing with content and processes, a third dimension evolved. This dimension consisted of the teaching methods and otherenvironmental factors within the schools which served to implement the first two dimensions.

Torrance[54] saw the first step in the three step process of creativity as a sensing of a need or deficiency, random exploration and a clarification of the problem. Following this process a period of preparation involving reading, discussion, exploring, and formulating possible solutions occurred. After this step came an analysis of the possible solutions. Arrising from this process came the birth of an insight, or illusion. The final stage was the evaluative process through which the most promising solution for eventual selection is determined.

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Osborn[55] described a similar creative learning process which he outlined in three steps. First came the process of fact-finding, which demanded a definition of the problem and the gathering and analysis of pertinent data.

The second step was idea-finding which involved the production and development of ideas. In this step, tentative ideas were formulated and used as possible leads. This step necessitated a process of selecting the most likely of the resultant ideas, adding others, and re-analyzing them through a means of modification and combination.

Finally, solution-finding called for final evaluation and adoption. The evaluative process necessitated testing and verification of the tentative solutions. The adoption process required a final decision and ultimate implementation of the final solution.

It could be seen that the steps of the creative learning process of Torrance and Osborn have several similarities. The ultimate difference was Osborn's omission of the stage Torrance described as the illumination where the eureka phenomenon occurred. Osborn also omitted the realization of a deficiency which was indicated by Torrance as a starting point.

Sociological Implications of Creativity

In a study of divergent thinking abilities of negro and caucasian children, Iscoe and Jones[56] found that the divergent thinking abilities of negro children were superior to those of caucasian children in spite of the fact that the caucasian subjects obtained significantly higher intelligence test scores.

This study of five to nine year old children also revealed no main effects of chronological age on divergen thinking. Their results for both

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negro and caucasian children included positive correlations between conventional I.Q. tests and divergent thinking abilities. These findings substantiate those of Kurtzman[57] who also found a positive correlation between intelligence and creativity.

Cicirelli[58] undertook a study of religious affiliations, socio-economic status, and creativity using 609 middle-class caucasian sixth graders from suburban Detroit. He found no significant differences between the creative ability of Catholic, Protestant, and Jewish sixth graders. High and low socio-economic groups did not differ significantly on verbal fluency, flexibility, originality, or verbal elaboration. The high socio-economic group scored significantly higher than the low socio-economic group on non-verbal elaboration and on I.Q.

Results of this study provide a little support to the belief that differences in socio-economic status account for differences in creative achievement correlations.

Lloyd[59] indicated that special techniques can be used to increase or develop creativity with the culturally deprived. She listed three characteristics of a creative child:

1. "The creative child has developed a way of looking at the world."
2. "The creative child has a strong sense of 'self.'"
3. "The creative child has a soul that soaks up beauty, reacting violently to it."

While these three characteristics were not intended to constitute a complete definition of the creative child, they represented three characteristics which were often overlooked in much of the literature Lloyd

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included three methods for developing these creative qualities in culturally deprived children:

1. "Give them free-wheeling exploration."

2. "Recreate these explorations through the use of puppet building and other similar devices."

3. "Varied censory experiences. As he grows creatively, his need for language increases."

Yamamoto and others[60] indicated three findings in a study of intelligence, creative thinking, and sociometric choice of fifth grade students:

1. "Creative thinking as well as intelligence didn't have much to do with a child's sociometric status in the classroom"

2. "The more creative children did not tend to show a stronger tendency to pick friends from the opposite sex more than the low creative group."

3. "Creative thinking apparently was not associated with the sociometric status of the students."

In a second study of fifth graders, Sitkei[61] found a negative relationship between creativity and conformity to group norms. However , there was a slight indication of differential conformity behavior between children of different creativity levels. The suggestion followed that creative thinking as currently measured was not so close a correlate of social conformity as had been generally believed.

Creativity and School Performance

Neufeld[62] administered the Southern California Tests of Creative Thinking ability to eighth graders. His research was concerned with the relationships between creative thinking ability and academic achievement.

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There was a significant relation between intelligence and all creative thinking abilities for both males and females. It was also determined that a significant correlation existed between creative thinking ability and achievement variables. Further, the correlations were highest within the make group.

Gilbert's[63] findings agreed with Neufeld. Not only did high creatives perform better than low creatives on intelligence tests, but the high creatives performed better on tasks of critical thinking than the less creative group.

There was also a parallel between the steps involved in critical thinking and creativity. However, it was found that high creatives did not fare as well in getting grades and were less frequently assigned to honors classes.

Jacobson[64] found that there was a low correlation between scores achieved on Guilford's tests of creative thinking ability and measures of school performance for adolescent youngsters.

The subjects' grades seemed to reflect citizenship and other qualities in addition to achievement in subject areas. Jacobson determined that present curriculums didn't require appreciable use of creative thinking abilities. This was found to be especially true for children with high I.Q.'s.

In a study of 192 junior high school students, Clark[65] found that students who scored high on divergent thinking variables had higher word fluency and reading scores than subjects classified as low divergent thinkers.

On a biographical form, high-convergent thinkers indicated that they received higher grades and had less trouble with their school work than the low-scoring group. Clark also found that the high-convergent thinking group had parents who exhibited more interest in college than the lower

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scoring group.

Harper[66] found that high creative adolescent subjects performed significantly higher in total critical thinking, academic aptitude, and abstract thinking abilities. Intelligence exerted a strong influence upon performance on tests of critical thinking, academic aptitude, abstract thinking, and earning of grades.

From these two findings intelligence seemed to be a more important factor in obtaining grades than high creative ability. Harper's study suggested that in order to score well on tests of creativity and measures of divergent thinking, it was also necessary to perform well on tests of intelligence.

Measurement of Creativity

According to Builford[67] Galton's studies of geniuses constituted the first attempt to understand the hereditary determination of creative performances. However, no attempt was made to understand the mental processes through which these creative productions were achieved.

Early successful tests of intelligence, from Binet to Terman and others, were primarily aimed at the prediction of achievement of elementary children. In evaluating achievement, little attention was given to self-initiated ideas.

One of the most widely used tests of creativity was the Minnesota Test of Creative Thinking developed by E. Paul Torrance and his associates at the Bureau of Educational Research of the University of Minnesota.[68] Torrance searched for an instrument which could be used from kindergarten through graduate school. Until 1966, this instrument constituted the only one of its kind in the country which could be used to measure creative thinking

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ability of elementary school children in a group setting.

In 1951, Torrance utilized certain materials from the Guilford tests, including the following tasks: unusual uses, impossibilities, consequences, problem situations, improvement, and problems. The Minnesota adaptations consisted of substituting objects or situations which would be more familiar to an elementary school youngster. Children were encouraged to think of unusual uses for objects like tin cans or cardboard boxes. They were asked to imagine all the things that might happen, if animals and birds could speak the language of men or if clouds had strings attached which hung down to earth. The Guilford test asked the question, "What would happen if all national and local laws were suddenly abolished?" [69]

The Minnesota Bureau developed several other types of tasks. An attempt was made to structure tasks which would follow the design of the creative process, each requiring several types of thinking. This approach was a departure from Guilford's emphasis on predictor measures representing single factors.[70]

A concerted effort was also made to develop tasks which aroused the curiosity and interest of the subject and allowed him to become completely absorbed in his task, which Torrance felt was an important process of creative thinking.[71]

Studies undertaken at the secondary level were made by Getzels and Jackson.[72] They attempted to develop and contrast the characteristics of youngsters with high creative abilities and high intelligence quotients. Their tests of creativity involved a battery which dealt with the subject's ability to deal with verbal and numerical symbol systems and object-space relationships.

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It was found that some very intricate and unusual problems arose in the scoring procedures used. Getzels and Jackson discovered that the choice between subjective and objective measurement was of great importance. The problem was how to adequately grade the richness and uniqueness of the subject's response without sacrificing any of the scoring reliability. Their attempt to maintain a good balance between the objective and subjective methods led to the development of an elaborate and time-consuming procedure of scoring.[73]

The Getzels and Jackson battery consisted of the following sections: word association test, uses test, hidden shapes test, fables test, make-up problems test, do you agree test, personal opinion questionnaire, descriptive words test, California Test of Personality, and indirect sentence completion.[74]

Barron's Measurement of Originality[75] was composed of eight tests which were all free- response tests. The subject was not presented with any alternative. Instead, he had to devise his own ways of solving the problems, seeing the blots, interpreting the pictures, or putting together the words or letters.

The eight sections of the Barron battery included: unusual uses, consequences B., plot titles B., Rorshach O. Thematic Apperception Test, originality rating, anagrams, the Barron Word Rearrangement Test: Originality rating, and the Barron Movement-Threshold Inkblots. Interrater agreement for these night sections ranged from .43 on the plot titles B and the Barron Movement-Threshold Inkblots to a high of .77 on the unusual uses section.[76]

One of the newest group tests of creativity was developed by Risser and Metfessel.[77] The authors needed a test which would constitute a culture free instrument for measuring disadvantaged youngsters. They suggested

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that tests of creativity would be more successful in predicting academic success in school than traditional intelligence tests.[78] They indicated that intelligence tests had emphasized convergent thinking, or the ability to ascertain the one right answer. The ability to arrive at new or original answers was emphasized on tests of creativity. They felt that the measurement of these dievergen thinking abilities was especially important in owrking with disadvantage youngsters.

The Metfessel-Risser Tests of Creativity were divided into six major components: sensitivity to problems, fluency of thinking, flexibility in thinking, originality in thinking, elaboration ability, and redefinition. A number of tests were developed to measure these six abilities.

Risser[79] later completed research which proved his theory that individual tests of creativity were more culture fair than traditional intelligence tests. His findings showed items in tests of creativity were not dependent upon a certain cultural background.

Adams[80] discovered a degree of significance pertaining to the conditions under which tests of divergen thinking were administered. Subjects were given tests under three different atmospheres. He found that the degree of spontaneous flexibility evidenced was influenced by the experimental environment atmospheres. The highest degree of divergent thinking was attained under an openly receiptive, non-competitive atmosphere.

Summary

In summarizing the Review of Selected Literature, the following generalizations can be drawn:

1. Rigidity and inflexibility on the part of teachers is a deterrent to the development of creative thinking abilities in children.

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2. Imagination and divergent production must be tolerated and encouraged in order to devleop the creative thinking aiblities of children.

3. A child centered approach emphasizing problem-solving and discovery techniques as opposed to over-emphasis on subject matter is important in the development of creative thinking ability.

4. One of the chief characteristics of creative students is their love of humor.

5. School principals must be interested in establishing a climate for creativity so that teachers can successfully carry out creative thinking activities in their classrooms.

6. In order for creative thinking to flourish, there must be a lack of threatening classroom atmospheres.

7. A supportive classroom climate which provides opportunities for original thinking, problem-solving, and honest appreciation for creative behavior, is necessary for creative thinking to flourish.

8. In order for children to score high on tests of creativity,above average intelligence is required. However, high intelligence does not automatically result in correspondingly high scores on tests of creativity.

9. Because highly creative children demonstrate a sense of self-confidence and personal worth, they are not easily defeated.

FOOTNOTES

[1] I. Taylor, "The Nature of the Creative Process," ed. B. Smith, Creativity, an Examination of the Creative Process (Ne York: Hastings House, 1959, pp. 53-59.

[2] Harold H. Anderson, "Creativity and Education" (East Lansing: Michigan State University, 1963), pp. 1-5. (Mimeographed)

[3] Kaoru Yamamoto, "Creativity - A Blind Man's report on the Elephant," Journal of Counseling Psychology, 12:4 April, 1965.

[4] Lawrence S. Kubie, Neurotic Distortion of the Creative Process (New York: Noonday Press, 1961), pp. 23-50.

[5] Ibid.

[6] J. P. Guilford, "The Psychology of Creativity," (Los Angeles: University of Southern California, 1965), p. 1 (Mimeographed)

[7] Philip W. Jackson and Samuel Messick, "The Person, the Product, and the Response," Journal of Personality, 33:348, Summer, 1965.

[8] D. W. MacKinnon, "Creativity in Architects," ed. C.W. Taylor, Widening Horizons in Creativity (New York: John Wiley & Sons, Inc., 1964., pp. 359-378).

[9] Lois Nelson, "Developing the Creative Process and Product," Elementary School Principal, 44:35, May, 1965.

[10] ASCD 1962 Yearbook Committee, "Creativity and Openness to Experience," ed. Arthur Combs, Perceiving, Behaving, Becoming: A New Focus (Washington: National Education Association, 1962) pp. 144-146.

[11] Ibid., pp. 149-161.

[12] Ibid.

[13] Ibid., pp. 161-163.

[14] Edythe Margolin, "Do We Really Prize Creativity?" Educational Leadership, 21:117, November, 1963.

[15] W.C. Wolfe, "Creativity - The Concept on a Hot Tin Roof," National Elementary Principal, 40:4, April, 1961.

[16] Ibid.

[17] Kenneth Wodtke, "A Study of the Reliability and Validity of Creativity Tests at the Elementary School Level" (unpublished Doctoral Dissertation, University of Utah, Salt Lake City, 1963), Dissertation Abstracts, 24:4091, 1963.

[18] J.W. Getzels and P.W. Jackson, "Creativity and Intelligence," School Review 71:112, Spring, 1963.

[19] E.P. Torrance, "Role of Evaluation in Creative Thinking," Revised Summary Report of Research Performed Pursuant to A Contract with the United States Office Of Education, Department of Health, Education and Welfare (Menneapolis: Bureau of Educational Research, 1964), pp. 5-6.

[20] Ibid., p. 12.

[21] Ibid., pp. 32-36.

[22] Eric Fromm, "The Creative Attitude," ed. H.H. Anderson, Creativity and its Cultivation (New York: Harpers, 1959), pp. 44-54.

[23] Russell Eisenman, "Recognizing Creative Students," Education Forum, 29:361, March, 1965.

[24] Elliott W. Eisner, "Creativity and Psychological Health During Adolescence," High School Journal, 48:465, May, 1965.

[25] E. Paul Torrance, "Seven Guides to Creativity," Journal of Health and Physical Recreation, 36:26, April, 1965.

[26] E. Paul Torrance, "Guidelines for Creative Teaching," High School Journal, 48:459, May, 1965.

[27] E. Paul Torrance, "Bringing Creativity into Play," Education, 85:547, May, 1965.

[28] Mary Lee Marksberry, "Encouraging Creative Pupil Behavior in Elementary Social Studies," Social Education, 29:338, October, 1965.

[29] Charles Castelli, "An Exploration of the Relationship Between Teachers' Creative Ability and Classroom Behavior" (unpublished Doctoral Dissertation, State University of New York, Buffalo, 1964), Dissertation Abstracts, 25:3320, 1964.

[30] E. Paul Torrance, Guiding Creative Talent (Englewood Cliffs, New Jersey: Pretncie-Hall, Inc., 1962), pp. 189-202.

[31] Ibid.

[32] Ibid.

[33] William Hutchinson, "Creative and Productive Thinking in the Classroom" (unpublished Doctoral dissertation, University of Utah, Salt Lake City, 1963), Dissertation Abstracts, 63:6278, 1963.

[34] Noel Reyburn, "Development of Divergent Thinking Through Oral and Written Language Instruction" (unpublished Doctoral Dissertation, University of California, Berkeley, 1963), Dissertation Abstracts, 24:5093, 1963.

[35] Walter Gray, Jr., "An Experimental Study Utilizing the Problem-Solving Technique in a Ninth Grade Health Class,"Dissertation Abstracts, 25:6012, 1964.

[36] Wilma Possien, "A Comparison of the Effects of Three Teaching Methodologies on the Development of the Problem-Solving Skills of Sixth Grade Children," Disseration Abstracts, 25:403, 1964.

[37] Sidney J. Parnes and Arnold Meadown, "Effects of Brainstorming Instructions on Creative Problem Solving by Trained and Untrained Subjects," *Journal of Educational Psychology*, 50:171, August, 1959.

[38] Edward Stone, "A Guide to Principles of Creativity-in-Teaching with Suggestions for Use in Elementary Social Studies, "*Dissertation Abstracts*, 22:507, 1961.

[39] J.W. Getzels and P.W. Jackson, *Creativity and Intelligence* (New York: John Wiley and Sons, Inc., 1964) p. 37.

[40] Kenneth A. Kurtzman, "A Comparative Study of High, Middle and Lower Creative Adolescents in Terms of Peer Acceptance: Attitudes Toward School and Personality Characteristics," *Dissertation Abstracts*, 26:5870, 1965.

[41] Loyce Willett, "The Relation of Individual Creativity and the Adequacy of the Senior High School Curriculum," *Dissertation Abstracts*, 26:3787, 1965.

[42] Loyce Willette, The Relation of Individual Creativity and the Adequacy of the Senior High School Curriculu, "*Dissertation Abstracts*, 26:3787, 1965.

[43] E.P. Torrance, "Problems of Highly Creative Children," *Gifted Child Quarterly*, 5:31, Summer, 1961.

[44] Abdel-Salem Abdel-Kadar, Abdel-Ghaffer, "Relations Between Selected Creativity Factors and Certain Non-Intellectual Factors Among High School Students" (unpublished Doctoral Dissertation, University of Denver, Denver, Colorado, 1963), pp. 121-122.

[45] Torrance, *loc*. *cit*.

[46] George Yee, "The Influences of Problem-Solving Instruction and Personal-Social Adjustment Upon Creativity Test Scores of Twelfth Grade Students," *Dissertation Abstracts*, 26:916, 1964.

[47] Laura Zirbes, Spurs to Creative Thinking (New York: G.P. Putnam's Sons, 1959), pp. 9-10.

[48] Gerald Ginsburg, "Creative Potential & Children Antecedents," *Dissertation Abstracts*, 26:916, 1964.

[49] Dean Daw, "Life Expectancies, Vocational Needs, and Choices of Original Thinkers and Good Elaborators," *Dissertation Abstracts*, 26:5223, 1965.

[50] E.P. Thorrance, "Adventuring in Creativity," *Childhood Education* 40:79, October, 1963.

[51] Moddi

[52] J.P. Guilford, "Creativity: Yesterday, Today, and Tomorrow," *The Journal of Creative Behavior*, 1:8,January.

[53] Calvin Taylor, "Questioning and Creating: A Model for Curriculum Reform," *The Journal of Creative Behavior*, 1:28, January 1967.

[54] E. Paul Torrance, *Guiding Creative Talent* (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962), p. 17.

[55] Alex Osborn, *Applied Imagination* (New York: Charles Scribner's Sons, 1963), p. 86.

[56] Ira Iscoe and John Jones, "Divergent Thinking, Age, and Intelligence in White and Negro Children," Child Development, 35:785, September, 1964.

[57] Eurtzman, *Loc*. *Cit*.

[58] Victor Cicirelli, "Religious Affiliation, Socio-economic Status, and Creativity," *Journal of Experimental Education*, 35:90, Fall, 1966.

[59] Jean Loyd, "Developing Creativity with the Culturally Deprived," *Instructor*, 75:27, February, 1966.

[60] Kaoru Yamamoto, Marlene Lembright, and Ann Corrigan, "Intelligence, Creative Thinking, and Sociometric Choice among Fifth Grade Children," Journal of Experimental Education, 34:83, 1966.

[61] George Sitkei, "Creativity and Norm Conformity in Fifth Grade Children," *Exceptional Children*, 32:257, December 1965.

[62] Joseph Neufeld, "The Relation of Creative Thinking Ability to Academic Achievement of Adolescents" (unpublished Doctoral dissertation, University of Denver, 1964), pp. 75-79.

[63] Janet Gilbert, "Creativity, Critical Thinking, and Performance in Social Studies," *Dissertation Abstracts*, 22:1906, 1961.

[64] Morris Jacobson, "The Relation of Creative Thinking Ability, Intelligence, and School Performance," *Dissertation Abstracts*, 26:7157, 1966.

[65] Charles Clark, "Convergent and Divergent Thinking Abilities of Talented Adolescents," Journal of Educational Psychology, 56:157, 1965.

[66] Jerry Harper, "Adolescent Critical Thinking Abilities, Academic Aptitudes, and Academic Grades as a Function of Creative Abilities, Intelligence, and Service" (unpublished Doctoral dissertation, University of Denver, Denver, 1965), pp. 123-125.

[67] J.P. Guilford, "Creativity: Yesterday, Today, and Tomorrow," *The Journal of Creative Behavior*, 1:3, January, 1967.

[68] Torrance, *loc. cit.*

[69] *Ibid*., p. 44.

[70] *Ibid*., p. 45.

[71] *Ibid*.

[72] J.W. Getzels and P.W. Jackson, *Creativity and Intelligence* (New York: John Wiley and Sons, Inc., 1964), p. 17.

[73] *Ibid*., pp. 198-199.

[74] *Ibid*., p. 17.

[75] Frank Barron, Creativity and Psychological Health (New York: D. Van Norstrand Company, Inc., 1963), pp. 200-202.

[76] Ibid., pp. 200-204.

[77] J.J. Risser and N.S. Metfessel, Group Test of Creativity (Los Angeles: University of Southern California, 1965), pp. 1-12.

[78] N.S. Metfessel and J.J. Risser, Project Potential: Interpretive Guide for the Tests of Creativity (Los Angeles: University of Southern California, 1965), pp. 1-2.

[79] John Risser, "An Individual Testing Approach to Assessment of Creative Abilities," Dissertation Abstracts, 26:7159, 1966.

[80] John C. Adams, Jr., "The Relative Effects of Various Testing Atmosheres of Spontaneous Flexibility, a Factor of Divergent Thinking, as Measured by Spontaneous Flexibility Tests," Dissertation Abstracts, 26:4433, 1965.

VIDEO PAPER III

CREATIVITY AND EDUCATION

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I shall examine two systems of education in an attempt to demonstrate the role of each in producing creative persons.

THE OPEN AND THE CLOSED SYSTEMS IN EDUCATION

1. The Open System - The Open System is a stimulating system of relationships which accepts uniqueness in perception and in thinking. Familiar examples of the Open System in education are found in the seminar, the class discussion, the term paper, the original experiment, or student project.

   These are examples found at different levels in the educational program. The greatest opportunity for learning in the Open System, however, is found in infancy and the preschool years when there are few environmental demands, no curriculum, and little systematic teaching. It is at this period of no curriculum and little pressure that the greatest and most rapid learning takes place and that creativity is most universally manifest. The Open System permits originality, experimentation, initiative, and invention; it constitutes the propitous environment for creativity.

2. The Impersonal Closed System - In education the Closed System is concerned very little with originality or invention by the student. It is concerned mainly with acquiring a body of knowledge, memorizing of facts, and finding answers to problems--all of which are already known to someone else.

   a. The Educational Curriculum - In education the Closed System is concerned with the memorizing of facts, formulas, and beliefs and the acquiring and storing of information. The information may be highly verified scientific findings, or it may represent bias, prejudice, superstition, or grossly false reports.

      I am not betlittling the multiplication tables nor the desirability of learning facts, because these are the tools of thinking and of communicating. They are means to an end.

      In the Closed System of education the student has only to learn what his forebears have already discovered or agreed upon. He learns what someone else thinks is right or wrong, to follow directions, and do what he is told. Unfortunately for most of us that is where our school learning stopped. It is, however, the system by which the heritage of the race is preserved--including the sorting, classifying, and cataloging of attics full of useless, unlovely, and undiscarded psychic antiques.

   b. Fixed-Answer Problem Solving - In the Closed System of education, the problems have fixed answers. That is, the answers are in the back of the book; they have been agreed upon by the culture, or they are found in the teacher's head or in the program of the teaching machine. Closed System education requires a kind of learning common to chemistry, physics, and mathematics, but is found in all subject matter areas.

c. Psychological Laboratory Studies in Learning - Almost all of our traditions and psychological theories about learning and problem solving have been obtained from "fixed-answer" or closed-system experiments. Rewards and punishments and "avoidance learning" in animals or in humans have defined goals and patterns of research design set in advance by the experimenter. They are excellent for the kind of obedience learning so important in dog training. But they do not produce the open system creativity found in humming a new tune, writing a poem, or making a scientific invention.

It is yet unknown to what extent the closed system learning theories of the animal laboratory can be applied to the purposes of general education. It is certainly unknown to what extent closed-system conformity (reinforcement) learning of the psychological laboratory can be applied, if at all, to the creative process in human behavior or to open system learning. Psychologists know practically nothing about open system learning.

d. Intelligence Testing - Mental testing is another area of psychological activity which reveals the wide extent of the Closed System. Practically all intelligence, ability, and achievement tests represent closed system performance. In these tests the ideal performance is conformity of desirable or even of usual behavior. We are just beginning to discover the meaning and the limitations of the Closed System in our past endeavors in psychological testing. For 20 years, we have known that there is something beyond an IQ of 140 that is important for productivity. But, for 20 years, we have known that it is not additional IQ points that make the difference. Creativity adds little to the child's IQ score. In Terman's genetic studies of "genius," the subjects were selected on the basis of their performance on closed system "normative" tests with answers in the back of the test manual. In retrospect, it is not surprising that the children in Terman's study, while developing into intellectually competent adults, have not distinguished themselves by their great originality in the arts and sciences. These "geniuses" were selected not on the basis of a demonstrated originality or uniqueness in their responses but on the basis of their swift and superior conformity in cultural norms.

e. Normative Individual Differences - Certain other limitations in classifying students were not apparent in the early stages of the testing movement. Creativity, uniqueness, invention could not be treated within the conventional Closed System of statistical techniques. For example, the concept of individual differences became submerged in the normative treatment of testing programs that produced central tendencies and correlations.

The research goal of the early testing movement was, however, primarily correlation and prediction. But only similarities can be correlated, and only the defined can be predicted. The uniqueness, which can neither be predicted nor defined in advance, and which is a necessary evidence of creativity, has been generally ignored or discarded by the statisticians and the testers. Only recently have there been efforts to capture and assess in test responses qualities of originality which for 40 years have been discarded.

f. Projective Tests - The spontaneous outburst of "projective" testing of the 1930's and 1940's was an effort to break out of the closed system method of "scientific evaluation" and to come closer to the originality of hidden truths in the unconscious. By the 1950's we could see that to assess an individual is also to assess his interacting both with accepting and with threatening persons. Projective tests were a discovery of a means of inducing symbolic communication in otherwise threatening situations. To discover the hidden truths of the unconscious is to open a closed system of defenses which the person has erected against a threatening environment of tabus, guilt and derision. Projective tests permit the unconscious in symbolic ways to come nearer to the conscious, to come into the open.

g. The Problem of Motivation - If the closed system of education consisted only in making available to the student a record of man's past experience, achievements, or agreements, educators would have few problems of motivation. Small children are curious investigators, open minded and adventuresome, interested in practically everything that touches their five senses. There is no problem of motivating small children. When the child goes to school, however, he encounters a curriculum which includes certain social pressures for him to learn, all of which have been set up by someone else. If we were to ask one question about motivation, it would be: What have the persons in the child's environment done to him to make the record of the past distasteful to him? Problems of motivation in education are probably related to the pervading presence in our educational institutions of environmental demands and expectations buttressed by force, threats, social pressures that constitute another kind of closed system which I shall mention next.

3. The Personal Closed System - The Closed System of man's past experience which I have described above is an impersonal Closed System. The past does not react, or respond, or interact with man. The past can inspire man or cause him to pause in wonder, but all diggers are the same to the dinosaur's bones. There is no motivation in the dinosaur's bones. The person-to-thing relating is of a different order than the person-to-person relating.

Person-to-person relating is of two directional orders: The Open System in which one individual both stimulates another and accepts another - which permits the other to go beyond himself and at the same time to be himself in interacting, to be unique, honest, and most important, creative. The order is also directional but opposite to the Open System in that one individual tends to restrict the expression of uniqueness, to obstruct or inhibit the creative interaction. Through domination, one person exerts power over another, or through usurpation puts himself in the place of another, and does his thinking and directs his acting. In both domination and usurpation there is force, threat, or the symbolic expressions of force in shame, guilt, and other techniques for the stifling of individual differences and for producing conformity. This personal domination and its symbolic expressions is the antithesis of love. It is so widespread in the history of man as to have led others more recently to classify it as a psychic plague analogous to the physicist's enthropy, which, according to the second law of thermodynamics, operates only in a closed system as a degrading of the quality of energy over time.

The history of the social evolution of man is a record of man's efforts to break out of a personally Closed System of domination and usurpation and advance into the greater freedom of an Open System with correspondingly greater respect for the individual. Differences between the personally Open System and the personally Closed System are found in extreme forms in the contrast of democracy versus dictatorship, of freedom versus slavery. Milestones along the path of civilization in controlling this plague of treating man as a thing, of using force and authority to usurp the creative prerogatives of man, are seen in the Magna Carta, in the Declaration of Independence, and in the Supreme Court decision - on integration of races in the schools. It is seen also in revolts against colonialism in the Far East and in Africa.

The education program has inherited the biases, fears, and anxieties of parents who are afraid to permit children to think and act for themselves. What is the meaning of compulsory attendance, of required courses, of core curricula, of specific assignments, of examinations, rewards, trophies, prizes, "honor" societies, failures, and punishment except as expressions of control? The use of power over a student is first an expression of lack of respect or of confidence in the person over whom it is used. It in turn becomes a source of anxiety in the student, an inciter of defenses, and hence a degrading of the quality of behavior of which the student is capable. The predicted outcome of this cultural domination is less of "motivation" and revolt, or conformity, submission, and psychic atrophy.

THE MEANING OF CREATIVITY

When we discuss creativity in education, everything we say must be interpreted in a context of relativity. There are no absolutes except by definition. Superlatives are expressions of poetic license, artistic exaggerations, caricatures to emphasize a point.

It is axiomatic that creativity must represent the emergence of an original, something unique. If we can accept this axiom, let us examine several propositions about creativity.

1. Creativity as Product and as Process - Traditionally, creativity is associated with a painting, a piece of sculpture, a sonnet, an invention, a product that can be seen, studied, enjoyed. The product, however, took time to produce; it did not happen all at once. In the conception and the making of the product, there have been several attempts and failures, transitions, and revisions. Creativity must be thought of as a process of planning, experiencing, acting by the person who is creating the product.

   The finished tangible product of creativity has been given greater attention than the obscure process leading to it. The process is often unverbalized, even by the person himslef, and therefore uncommunicated to others. We are, nevertheless, concerned here with creativity as a developmental process from infancy throughout the entire life span.

2. The Process of Creativity Exists Only in the Moment of Now - One can define or describe the Mona Lisa only after it has been painted. The product of creativity is not predictable. The product is not even definable or describable until the student, the author, the artist, or someone else can look back on a process that, as far as this product is concerned, has been interrupted, stopped, fixed, closed.

   The product exists only in the closed past; the process only in the open instantaneous moment of now. The process is the flow of the "totality" of the person between the historic past and the unknown, unpredicted, and unpredictable future.

3. The Product of Creativity Exists Only in the Past - The products of the sciences and the arts not only belong to the past; they take on the characteristics of the crystalized Closed System of the past. The product of past experiences has a static, unchanging immobility. It is rarely that from the product one can infer or imagine the process, the struggle, the imagination, frustrations, endurance that went into the product. Hemingway succeeded in an extraordinary way in presenting vividly and understandable the successive moments of now in the story of the Old Man and the Sea. But he has not told us of his successive moments of now in conceiving and writing this exquisite tale. In fact, it may be one of the illusions by which we presume to judge the quality of greatness that the product is so stripped of nonessentials and irrelevancies that it seems in its simplicity to have come without effort.

4. Creativity, however, is based upon an awareness of the past. The reports of creative persons rather consistently imply that the process that produces a novel product is based on wide and deep knowledge and experience, in addition to skills, persistence, and hard work.

The past, however, contains answers only to problems of the past. Attempts to apply the answers of the past to the problems of the present produce sterotypes. "Answers" to the problems of the present are derived from reorganization of experience by a human being from his awareness of the past; but the answer is invented by the individual person interacting spontaneously and creatively with his present environment. The moment of invention is now; it is the spontaneous, truthful expression of a person interacting with his environment. With a richer awareness of the experience of the past the person can presumably act more fully.

5. Creativity as a Quality of Protoplasm - In biology each cell is unique, a special and individualistic organization of matter. No one has found two biological cells identical; no one expects to. A biological cell - life - is the emergence of an original.

   In evolution, as cells "learned" to interact in a mutually harmonious way, they became specialized in structure and in function. Over millions of years the process of organization of matter has continued, producing different varieties of differentiation (specialization) and integration (harmonious interaction in a unity of purpose). As far as they can make comparisons, physiologists say that the human organism has the highest degree of differentiation and the highest levels of integration of cells yet brought forth in the process of evolution.

   These aggregate of cells called humans are also unique. Each human is an original. As an individual interacting with other humans in his environment he is moving, growing, changing, flowing uniqueness. As is true for his cells, the individuality of his total organization and the harmony of purpose or the integration with other humans are basic necessities for his optimum development.

6. Creativity as Harmonious Interacting (Socially Integrative Behavior)- Uniqueness or individuality is not enough to describe the process of creativity. The person does not live in a vacuum. Life, itself, is an Open System and one cannot live fully without a harmonious or integrative interacting with his environment. Creativity as an unfolding or flowing or individual differences presupposes an individual in a propitious environment. Creativity is not found in the person as such. We know that in certain situations one is stimulated and feels more free to be himself - in other situations he feels threatened, inhibited, and becomes cautious or even afraid to express his ideas. Life is a process of interacting: it is creative to the extent that the interacting is harmonious. Persons in the enfironment can facilitate or retard the interacting. To the extent that this interacting is threatening or lacking in harmony, one becomes defensive and to this extent lacking in the expression of originality.

7. Creativity as a Developmental Process - The infant starts life in a relatively Open System of interacting and of freedom of interplay with his environment. As he develops in ability to communicate and to extend his mobility, the environment of persons begins to close in on him. The child encounters a complicated system of environmental demands, tabus, socializing and acculturating processes. These early requirements for conformity are climaxed by a school curriculum which also is mostly Closed System learning and from which there is no escape.

The environments of most children do not stimulate nor even permit the continuing process of development in creativity.

It is not surprising that in early childhood creativity is universal and that among adults it is almost nonexistent.

8. Range of activities included under creavity viewed in terms of the above propositions is to be found in everyone and at all ages. It then follows that the range of activities to be included under creativity would be very wide indeed. The question will occur to some whether the concept of creativity thus becomes so general as to have lost its meaning.

No one asks whether learning at any age or at any level or in any medium is so general as to have lost its meaning. Creativity as process is important not because the product of each moment is such a gem but because the process is the essense of life itself.

9. The Unconscious: The Truth Within the Self - No one knows where or how the unconscious develops in the human infant. The concept of the unconscious as developed by Freud is today being re-examined to make it consistent with assumptions that the basic, primary things in the universe are positive and directional: love, life, growth, communication, harmony, evolution, and progressing intergration with the cosmos.

Reports of adults, of poets, scientists, artists indicate that consciousness by itself does not seem to be able to produce things of beauty, truth, and harmony, or at least not to do it so well as when one can draw on the so-called depths of the unconscious, the truth within the self.

The conscious and cultural world of the adult and of the child is intolerant of truth and beauty as the person himself sees it. The person is thus obliged to behave in restricted and symbolic ways, revealing only so much of himself as it is safe to reveal. The quality of one's symbolic behavior is degraded to the extent of the necessity to cloak and disguise it in the double talk which a judging, evaluating, and dominating culture requires. The remainder of his conscious behavior is a camouflage or veneer which every adult has learned very early and painfully as a child but very well in the "socializing" process.

The inspired moments reported by creative adults as coming in the night, on a walk alone, or in the early morning hours seem to be moments when the person can more easily cast off the trappings of sham, the irrelevancies of the culture, with which he is obliged to live and which color his conscious thinking. It is at these rare, inspired moments of unity, harmony, and security in his interacting with the universe that one senses his originality, lives consciously with his unconscious, becomes creative.

To live creatively is to live truthfully. It is to live truthfully as one himself sees the truth. To live merely according to the truth as anyone but himself sees the truth is not creativity, but conformity.

VIDEO PAPER IV

TWENTY-SIX CORRELATES OF CREATIVE BEHAVIOR WITH EXAMPLES OF CLASSROOM PROCESSES TOWARDS THEIR DEVELOPMENT

PROJECT POTENTIAL

N.S. Metfessel, Ph.D., Mildred Murry, M.S., and J.T. Foster, M.S.

1. Tolerance for Ambiguity

    a. Definition: Feeling comfortable when faced by a complex social issue having opposed principles intermingled, as deviation from a standard or acceptance of a state of affairs capable of alternate outcomes.

    b. Classroom Application:

    - Exercises where rewards go to those keeping a problem "open" by resisting attempts by others for premature "closure."
    - Developing a willingness to tolerate a calculated degree of humor--foolishness, absurdity, incongruity, exaggeration, satire, irony.
    - Realizing that all that is unproven is not necessarily wrong.
    - Regarding creativity as a process in which there may or may not be a tangible product.
    - Avoiding forced, set patterns.
    - Respecting "differentness."

2. Self-Sufficiency

    a. Definition: Knowing the self as an individual that has adequacy and capability of qualification, skill, and efficiency.

    b. Classroom Application:

    - Opportunities for individual pupils to design, carry out, and evaluate their own activities.
    - Dispensing the sense of awe of masterpieces.
    - Encouraging self-respect and trust in self.
    - Accepting aloneness as a vital part of living that is complementary to togetherness.

3. Independence in Making Judgments

    a. Definition: A personal, critical assessment and appraisal of alternative variables which allows an individual at any given point in time to be a "minority of one."

    b. Classroom Application:

    - Activities which demonstrate sometimes negative influence of group consensus or pressure, especially as developed against people who were "right" and resisted these pressures even though they were a "minority of one."

- Helping the pupil to perceive and to define the problem correctly by keeping a balance between: (1) time and timeliness, (2) orderliness and logical thinking, (3) respect for authority and maintenance of self-respect and individuality, (4) responsibility to the group and the teacher and responsibility to himself ("to thine own self be true..."), (5) information and information-getting skills.

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4. Self-Assertiveness (With Self-Acceptance)

   a. Definition: Having an attitude toward one's self and one's personal qualities that finds them of unique worth--an objective and unemotional recognition of one's abilities and limitations without undue sense of pride, guilt, or self-blame.

   b. Classroom Application:

      - Situations which allow one person to initiate an idea which is carried out by others under the leadership of the initiator.
      - Capitalizing on the pupil's potential for self-direction by testing through application the hardware of thinking--knowledge and intellectual technique.
      - Recognizing that same pupil bahavior which may be most irritating arises out of pupils' struggling attempt to reconcile opposites in their nature and to tolerate large quantities of tension as they strive for a creative solution to difficult problems which they have set for themselves. (MacKinnon, 1960)

5. Risk-Taking Orientation

   a. Definition: Taking a chance of encountering failure, hazard, or peril or exposure to such a chance.

   b. Classroom Application:

      - Assignments in which the importance of the right-to-fail is demonstrable.
      - Exercising controls until skills are adequate, then permitting wide testing of limits. (Torrance, 1964)
      - Encouraging guessing that is followed by confirmation.
      - Capitalizing on pupils's natural curiosity.
      - Helping pupils channel their high level of energy into independent projects so that pupils can better hope to reach the high goals of achievement which they set for themselves. (Ventura County Schools, 1962)

6. Constructive Non-Conformity as a Way of Life

a. Definition: Situations in which the pupil makes positive contributions though behavior does not correspond to a recognized pattern or standard.

b. Classroom Application:

- Practices which demonstrate the difference between non-conformity *per se* (just being "different") and constructive non-conformity.
- Putting aside or rejecting conventional and superficial explanations of phenomenon (part of Einstein's genious was his inability to understand the obvious).
- Encouraging self-initiated learning with rewards for unique achievement and not for conforming achievement only. (Guilford, 1960)
- Pupils learning to question answers as well as to answer questions. (Guilford, 1960)
- Respecting the right of each person to develop in his own unique way, so long as his conduct is socially tolerable. (Guilford, 1960)
- Having a continuum of rewarding creative thinking in order for it not to be stifled. (Guilford, 1960)
- Using problem solving in connection with behavioral information.
- Realizing that a creative person may have an atypical concept of adjustment, namely to adjust the environment rather than to adjust to the environment. (Ventura County Schools, 1962)
- Accepting the dignity and worth of these individuals by helping them to accept themselves, especially their giftedness. (Torrance, 1964)
- De-emphasizing group participation with its demands for conformity and provide maximum opportunity for the able pupil to work out his own interests.

7. An Intellectual Set Towards Alternative Answers and Solutions

a. Definition: Serial behavior in which one type of response having been made to a stimulus a certain number of times shifts to another response existing, occurring, or performing so as to succeed in turn, first one then the other.

b. Classroom Application:

- Procedures which positively reinforce those who question simple answers to complex problems and who deal, where appropriate, in multiple-causation models.
- Helping pupils to improve their ability to ask better questions by making good guesses about what the possible answers might be. (Torrance, 1960)
- Encouraging spontaneity as well as a series of logical problem solving techniques.
- Discovering the unexpected when seeking for something else.

- Realizing that conflict can be an opportunity for creative thinking--how we can improve upon the situation, hence resolve differences, or accept an alternate outcome? (Ventura County Schools, 1962)

8. Enhancing Interactiveness

   a. Definition: Intensifying mutual or reciprocal influence between two or more people whereby the behavior of one is stimulus to the behavior of the other.

   b. Classroom Application:

   - Dynamics which indicate that too much conformity robs one of individuality and that too much individuality robs one of the benefits to be gained by continued interaction with others.
   - Being active rather than inert, creating as well as reacting.
   - Encouraging varied types of competition. (Torrance, 1964)
   - Having group discussions wherein some pupils help by setting the stage while others make crucial leaps ahead by not slavishly following the discussion, but later re-entering the discussion to send it down new, fresh routes. (Ventura County Schools, 1962)
   - Devoting considerable teacher time to information interaction with one or two students at a time.
   - Avoiding conditions which produce fear of criticism which are likely to inhibit the individual's expression of creative ideas. (Ventura County Schools, 1962)

9. Fluency (Group Oriented)

   a. Definition: Facility with which ideas are called out of memory storage for use in new situations. (Guilford, 1960)

   b. Classroom Application:

   Word Fluency--ability to think of words rapidly, each word satisfying the same letter requirements. (Guilford, mimeo)
   - List words containing the letters "f" and "g."

   Ideational Fluency--ability to generate a quantity of ideas--associated with impulsivity, self-confidence, ascendance, appreciation of originality, and inclination away from neuroticism--ability to list rapidly meaningful words or ideas in a specified category to meet meaningful requirements.
   - Listing objects that are solid, white, and edible.
   - Brainstorming first a list of problems and then a list of suggested solutions--criticism must be withheld until later (judgment is ruled out in the idea producing stage); the wilder the idea the better as it is easier to tame down than to think up (free-wheeling is welcomed); the greater the number of ideas, the more the likelihood of winners (quantity is wanted); in addition to contributing ideas of their own,

participants should suggest how ideas of others can be joined into still another idea (combination and improvements are sought).

Associational Fluency--pertains to the completion of relationships, in distinction from the factor of ideational fluency which involves giving ideas that fit a class. (Guilford, mimeographed bibliography)

- Listing words that have some relation to a given word (synonyms, inventing new words, words which communicate feelings or moods--"squishy" words).
- Applying thinking by analogy, for example, may have a more general utility.

Expressional Fluency--ability to put words into organized phrases or sentences.

- Facile construction of sentences as making a four-word sentence using the initial letters w__c__e__n__. (Guilford, 1960)
- Tasks such as writing of sentences.
- Tasks so broad as to pertain to organizing ideas into systems.
- Exercises, for example, in which the group is asked to produce clever titles for a selection read in class, and finally to select the best title.

10. Fluency (Individually Oriented)

a. Definition: The person who produces ideas rapidly should have an advantage in creativity over the person who produces them more slowly, providing the average level of quality of the ideas is equal. (Guilford, 1960)

b. Classroom Application:

- Situations which help individuals increase the flow of ideas by such exercises as listing all the different ways of doing something, or uses of an object--within a given period of time; quantity of output determines the score providing the responses are appropriate.

11. Originality (Group Oriented)

a. Definition: The meaning of "originality" has caused some debate. "In our research and in that of others originality means the production of unusual, far-fetched, remote, or clever responses. But there are some who say that an idea is not original or novel unless no human being has ever thought of it earlier. This conception is worthless to the scientist because there is no way of knowing that an idea has never existed before . . Fortunately, we can resort to empirical signs of novelty in terms of the statistical infrequency of a response among members of a certain population that is culturally relatively homogeneous." (Guilford, 1962)

b. Classroom Application:

- . Opportunities for becoming aware of the potentially "unusual" in the pupil's surroundings. An exercise, for example, in which the group is asked to observe a scene, and then to write about an unusual aspect of the scene--with increased point allowances for the extent of unusualness, i.e., how infrequently other members of the group selected the same aspect.
- . Rewarding original ideas.
- . Judging these ideas even though this is difficult because of lack of existing standard and their very novelty.
- . Testing systematically each new idea before passing judgment.
- . Providing warm-up experiences as a prelude to the creative act.
- . Using humor.
- . Keeping the structure of the situation open long enough so that originality can occur. (Torrance, 1963)
- . High originality scores are associated with aesthetic expression, reflective thinking, tolerance for ambiguity, and little need for discipline and orderliness. (Guilford, mimeographed bibliography)

12. Originality (Individually Oriented)

a. Definition: The ability to produce uncommon, remote, or clever ideas, as on a continuum. When test directions ask the subject to be more original or creative, he makes higher scores on originality, but lower scores in ideational fluency; he also performs more slowly.

b. Classroom Application:

- . Practices which require the ability to have unusal or clever ideas or see relationships between things. An exercise, for example, in which the pupils are instructed to use any method other than the obvious one of reading to or telling the class in making a report--for instance, dramatizations, quiz session, tape recorders, interviews, etc.
- . Uncommonality is a factor in creative thinking--that means that any idea which no one else has thought of is uncommon and therefore might lead to a really new idea. (Ventura County Schools, 1962)
- . Faulty perception of the problem and its requirements may sometimes lead the person to an effective approach which he would never have considered if he had in the beginning seen the problem in its proper way. (Ventura County Schools, 1962)
- . Classroom periods of silence.

13. Flexibility

a. Definition: Ability to be free from fixed ideas and habitual ways of solving problems, ability to strike out in new and unexpected directions to achieve novel results. It also means a change of some kind--a change in the meaning, interpretation, or use of something, a change in understanding of the task, a change of strategy in doing the task, or a change in direction of thinking, which may mean a new interpretation of the goal. (Guilford, 1960, 1963)

b. Classroom Application:

Spontaneous Flexibility--production of a diversity of ideas in a relatively unrestricted situation (addition, combination, substitution, ways to improve a product), a tendency to jump from one category to another even when there is no need to do so (keeping our thinking at a rather high level of abstraction, thinking in terms of broader classes).
Adaptive flexibility--abandonment of conventional problem-solving methods that have become unworkable and to think of original solutions (reversal and changing positions as putting the eye of the needle in the point of the needle to make possible the invention of the sewing machine); ability to use a variety of approaches to solve problems when this is necessary to the solution; making changes of some kind--changes in interpretaton of the task, in approach or strategy, or in possible solutions.

- Our current interpretation of the factor of originality is that it is adaptive flexibility in dealing with verbal information. (Guilford, 1962)
- Exercises which permit the counter-action to "closed" systems of thinking. An exercise, for example, in which pupils are asked to think up various alternatives for some propagandistic situation.

14. Elaboration (Free Association Ability)

a. Definition: Ability to supply detailed steps of a plan when given a bare outline of what is wanted. (Guilford, 1960)

b. Classroom Applications:

- Activities which permit pupils to add to a stimulus in order to come up with a finished product. An exercise, for example in which pupils draw two "squiggle" lines on their papers, then complete a drawing and write a story about it.
- Press thinking far enough, do some of the tedious work of implementing ideas, submit these ideas to analysis or standard tests.
- Provide a few kinds of activities which have a continuity not broken by mundane interruptions and which can be completed over a period of time, manipulation of main ideas and their details.

15. Redefinitive Abilities

a. Definition: Ability to remake boundaries between classes or groups of phenomena, between meanings of words or phrases, or in terms of use.

b. Classroom Application:

Gestalt redefinition--ability to give new meanings to the use of an object. (Guilford, 1963)
Symbolic redifinition--ability to regroup letters of familiar words to make new words. (Guilford, 1963)
Figural redifinition--ability to look at a complete line drawing and discover hidden figures. (Guilford, 1963)

. Practices which allow pupils to "look at" things in a new light. An exercise, for example, in which pupils are asked to think of some purpose for an object other than that for which it was originally intended.
. Helping the pupil to become aware of the consequences of the functional application of information. (Ventura County Schools, 1962)

16. Time for Idea and Problem Development

a. Definition: Structuring the classroom schedule to allow for sequence in a teaching unit extending over a considerable period of time, i.e., imagining and thinking in a situation that knows certain elements and will ascertain other elements.

b. Classroom Application:

. Assignments which are of the "taking-home" thinking type, so that anytime during the following days or weeks a pupil could jot down his ideas on the problem. The teacher could take a few minutes every so often to refresh pupils' interest and encourage their thinking along new lines.
. Providing for alternate active and quiet periods.
. Instruction should periodically permit pupils to cope with an unstructured problem appropriate to the subject matter, intriguing enough to provike pupil interest, and complex enough to represent a challenge. (Ventura County Schools, 1962)

17. Freedom for Idea and Problem Development

a. Definition: Minimal use of external restraints to allow the pupil to make his own decisions regarding the kinds and/or directions open to him.

b. Classroom Application:

. Procedures which allow pupils to do something "for practice" once in a while--without the threat of evaluation. An exercise, for example, in which they create games and vary the rules and restrictions.

- Giving pupils opportunity to discover, select, and define their own problems. (Ventura County Schools, 1962)
- Balancing the richness of exposure to many instructional devices and minimal external stimuli to maximize the conduciveness to creativity in the classroom. (Ventura County Schools, 1962)
- Maintaining a combination of instruction devices as an open system to encourage multiple approaches to problems, then having quiet periods to encourage creativity. (Ventura County Schools, 1962)
- Using all the known learning and thinking processes in teaching pupils subject-matter content, as new instructional devices alone do not encourage creativity--they tend to preserve traditional educational practices. (Ventura County Schools, 1962)
- Listening, being actively interested. (Torrance, 1964)
- Providing opportunity to develop purposes worthy of the enthusiastic devotion creative pupils seem capable of giving. (Torrance, 1964)
- Sharing the creative pupil's joy of working, for he does not crave power but the satisfaction of creative work. (Torrance, 1964)
- Withholding immediate judgment of pupil ideas, for this may suppress, curtail, or otherwise stamp out questioning and other curiosity behavior.

18. The Ability to Stimulate Momentum Following Idea or Problem Development

    a. Definition: Giving impetus to the whole process by which a pupil can be motivated to continue a study to a point of closure on his own.

    b. Classroom Application:

        - Maintaining a combination of instructional devices for stimulating curiosity and wonderment--providing pupils with a wide variety of experiences.
        - Testing systematically each new idea.
        - Giving information about the creative process.
        - Helping the pupil make use of the relevant information that he does possess; if there is a superabundance of information presented in the problem, help the pupil sort out what is relevant from the confusing mass of the irrelevant. (Ventura County Schools, 1962)
        - Avoiding relentless pressures to be well-rounded. (Torrance, 1964)

19. Information Reception Skills (Reading)

    a. Definition: The act, practice, or art of perusing written or printed matter and ascertaining or considering its content or meaning.

b. Classroom Application:

- Assignments which provide for outside reading of articles and which require the pupil to make an outline of his ideas that were "sparked" by reading the article.
- Encouraging the acquisition of knowledge in a variety of fields.
- Encouraging critical, imaginative reading by teaching library skills, urging self-directed and discriminating reading as well as repetitive re-reading. (Ventura County Schools, 1962)
- Inquiry is more active and sustained in that it represents a positive, aggressive search for knowledge and understanding (self-directed process of systematic investigation). (Ventura County Schools, 1962)

20. Information Reception Skills (Listening)

a. Definition: Conscious effort to keep the mind upon the thought in order to hear and to direct attention to the meaning or import of the sound. What insights was the speaker trying to build?

b. Classroom Application:

- Exercises which have pupils listen and search in an "area" in order to come back with some questions to which man apparently does not have answers.
- Helping the pupil to use the amount and availability of information or knowledge pertinent to the solution of the problem. (Ventura County Schools, 1962)
- Giving pupils the opportunity to express their thinking without fear of reproach, even if it is on the problem although along different lines than that expected (could this be one reason pupils say that they "did not hear the question?")

21. Information Expression Skills

a. Definition: Anything a person does, the act being determined by the nature of the person and codetermined by environmental factors. (English and English, 1958)

b. Classroom Application:

- Environments which encourage different modes of expression. Provision, for example, for a pupil to express himself in a manner in which he essentially does his thinking, for instance, spatially, graphically, verbally, etc.
- There is one point at which an artist can show exceptional creativity, although novelty can be shown in his art form, materials, technique, style, and/or manner in which he succeeds in getting his message across. (Guilford, 1960)
- Concocting a class program for a special audience.

- Providing activities whereby pupils can express themselves through projection. (Torrance, 1964)

22. Resourcefulness

    a. Definition: An aggregate of one's available property as skills, judgment, capacity for finding or adjusting means, power of achievement.

    b. Classroom Application:

    - The teacher could ask pupils to consider evidence and speculate what could occur--without describing an actual solution--being sure to evaluate the speculations before giving the actual solution (successfulness of a solution ought to be determined more by its plausibility than by its correctness). (Ventura County Schools, 1962)
    - Encourage the ideas which emanate accidentally from pupils' thinking (enthusiasm is contagious).
    - Assigning some open-end or continuum activities that span the semester's work so that individual pupils can contribute at any time during the semester's study.
    - Creative individuals search for uniqueness through vocational choice. (Torrance, 1964)

23. The Ability to Develop Absorbing Interests

    a. Definition: Giving a high level of selective attention to one object with inattention to others so that the attention is focused on engaging in an activity solely for the gratifications of engaging therein (the object or activity can be valued in and of itself).

    b. Classroom Application:

    - Pupils may under proper stimulus teach themselves a great deal. A spirited quest for a significant idea may be worth more to the pupil than a routine assimilation of factual lore (this implies that we ought to pay tribute to the distinction between wisdom and knowledge, as it is only the latter that is vulnerable to obsolescence).
    - Ability to focus, to become committed, to be involved to the point of accepting responsibility.
    - Providing opportunity for each pupil to exercise all the general skills so he can be made aware of the nature of each skill. Having tried himself out on all of them, he can then learn in which direction he is likely to develop most rapidly and where his greatest interests lie. (Guilford, 1960)
    - Providing a file of enrichment activity suggestions, a list of sources of information to tell about each activity, a supply drawer of manipulative materials suitable to complete the activity (curious people are never idle).

- Pupils need to be able to sustain intensive effort, to experience the feeling of mastery, of straining closure on longer and more complex problems.

24. Sensitivity to Problems

a. Definition: Persons who are able to recognize problems are more apt to work on them, and if they do, are the more apt to discover solutions. (Guilford, 1963)

b. Classroom Application:

- Approaches which help individual pupils to increase their flow of ideas through such experiences as listing things under topic headings like "what would happen if ..." or "what would it be like if ..."
- Teaching skills of avoiding peer sanction.
- Creating "thorns in the flesh."
- Noticing something wrong or in need of improvement (defects, deficiencies, errors) as well as the observation of the inadequacy of solutions keeps the creative thinker at work on his problem. (Guilford, 1963)
- Encouraging constructive criticism as "what can I add" or "what is here that is good that I can build on," tape recording pupil work, then playing back for analysis and reaction. (Torrance, 1960)
- Helping pupils to test their perceptions against reality and to trust their own perceptions of reality.
- Avoiding over-use of the analytical attitude for problem solving, as analysis tends to disassemble, and by this very separation process, attributes which pertain to the whole phenomenon may be destroyed or may fail to emerge in the first instance.

25. The Ability to Develop Insights in Ambiguous Areas

a. Definition: Process by which the meaning, significance, pattern or use of an object or situation becomes clear through reasonable understanding and evaluation of one's own mental processes, reactions, abilities, and self-knowledge.

b. Classroom Application:

- Helping pupils live successfully through the consequences of learning by experience possible strong tendencies in others to close their minds to new ideas or to react with hostility toward the ideas or toward their originator.
- Emphasizing a vertical organization (subject matter lies on a continuum and/or spiral from concrete to abstract) as well as a horizontal base of simple skills reinforcement. (Ventura County Schools, 1962)
- Avoiding immediate censure of sincere questioning of the text and/or the teacher. (Torrance, 1963)

26. General Assessment and Evaluation of the Creative Process

a. Definition: Determining the relative importance of something in terms of a standard, value, or measurement of attainment of a goal; this usually includes a study of the relative effectiveness of regulated conditions in furthering or hindering attainment. (English and English, 1962)

b. Classroom Application:

- Activities which remind students that
  - --All individuals have creative abilities but not all in the same area.
  - --Learning a new technique is probably needed when a pupil is blocked in the solution of a problem.
- Evaluation implies a well-considered set of values, not just reaction.
- Not being satisfied with things as they are is a matter of evaluation.
- Pupils should be taught to apply standards and to accomplish good judgment concerning creative products, but they should also learn to apply critical thinking after the production rather than before it begins.
- Supplement a grasp of basic factual information by using a large number of objective-type tests as routine checks, essay examinations with open-end questions, and oral inquiries into student progress.
- Evaluation comes into the picture in determining whether or not the produced information fits the search model. Relaxed evaluation would permit a broadening of the base of the search, whereas an evaluative attitude with some degree of strictness should narrow the search. In doing so, however, it may lead more efficiently to good answers. This should depend upon the clarity and accuracy of the search model . . . Evaluation incident to an overly strong desire for a quick solution would also be handicapping . . . Hyman has found that a general critical attitude can have rather broad transfer effects in solving problems. (Guilford, 1962)

c. Principles for rewarding creative thinking

- Treating questions with respect
- Treating imaginative, unusual ideas with respect
- Showing pupils that their ideas have value
- Giving opportunities for practice or experimentation without evaluation
- Encouraging and evaluating self-initiated learning
- Tying in evaluation with causes and consequences. (Torrance, 1960)

SECTION IX

PROSPECTUS

DATA

Diagnosing and Assessing the Teaching Act

An Approach to Supervision and Evaluation

Introduction

This prospectus has been developed as an introduction to the DATA program for school administrators and teachers. As an introduction, the prospectus is incomplete and sketchy. No attempt has been made to explain in detail the complex set of skills, knowledge and attitudes that are involved in the implementation of this program. Following the introduction is a rough model of an evaluation instrument, developed for those whose supervision philosophy is consistent with the DATA program.

The program and the categories of teaching competency represent the thinking of over 200 teachers and administrators. We recognize the inherent danger of listing any set of instructional competencies and suggesting they be considered "basic" to an evaluation instrument. While this list may be unacceptable, we believe that each faculty should develop a total supervision program which is consistent with the thinking of its school.

The authors are indebted to Dr. Abraham Fischler, Nora University, and Dr. Morris Cogen of the Harvard-Newton Schools for the basic concepts and procedures of clinical supervision which underlie the program.

DATA

-- Diagnosing and Assessing the Teaching Act --

The DATA program is designed to objectively analyze the behavior of classroom activities, with the intention of assisting the teacher toward more effective instructional techniques. The need for such a program has been demonstrated by the profession in its search for a clear definition of teacher competency and by the general public in its insistence through legislative enactment that teachers must be evaluated by reference to "evidence."[1] The kind of evidence which satisfies the intent of the legislation must be defined in terms of professional competence. This has led a number of researchers to find more useable devices to explicate the teaching act in a way that produces reliable, reproducible information.

DATA involves a set of procedures which can be quickly mastered and readily understood by most members of the profession, and at the same time, generate useable information for teaching improvement and the evaluation of teaching competency.

As the acronym DATA suggests, the teaching act is first diagnosed through observation, and then assessed through analysis of the instructional pattern. While classroom behavior is not the sum total of teacher effectiveness, neither should the competence of teachers be assessed without direct reference to those actions which occur in the classroom.

In summary, DATA is a program which is continuous, sequential, cyclic, and behavior-oriented. It attempts to record for analysis the observable behavior in the classroom, and leaves for other methods and techniques the analysis of those aspects of the teaching role which includes curriculum planning, interpersonal relationships, the inclusion of valid subject matter, the impact of personal characteristics upon total effectiveness, and other elements of teacher competency which are important to total effectiveness, but not directly observable in the teaching act.

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[1] See for example, Education Code 13403-13449.

With the continued use of DATA techniques, however, many of these aspects can become topics of discussion with, and self-analysis by the teacher. As the teaching act itself is dissected and reconstructed, all parts of the complex teacher role may become involved.

Basic Assumptions of the DATA Program

As has been suggested, DATA is designed to more rationally and effectively modify instructional procedures toward clearly defined goals. Inherent in the development of this particular program are a set of assumptions. Before proceeding with a description of the program, these assumptions are listed for critical analysis by the reader.

Assumption I: Teaching is a set of identifiable patterns of behavior. We believe the research on human behavior supports the contention that human behavior can be categorized, and that teaching is one specialized type of human behavior. Further, we would support the notion that as a category of human behavior, touching behavior itself can be observed, categorized,and analyzed. Without such a position, we believe any supervisory program would be doomed to failure, or reduced to descriptions of personality characterists and subjective impression of the classroom "happening."

Assumption II: When selected patterns of teaching behavior are changed, the improvement of instruction can be achieved.

Much research is presently directed toward the critical analysis of the teaching act.[2] Whereas few researchers have defined specific behavior as essential to effective teaching, they have described many as being associated with effective learning. Further, the position taken in the DATA program is that any significant change in the complex of effective teaching behaviors will more likely occur if specific behaviors are isolated for study . In this manner, the teacher can focus on one element in his teaching, rather than the whole set.

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[2] See Bruce V. Biddle. Contemporary Research in Teacher Effectiveness. (etc.) As an example.

Assumption III. The improvement of instruction is the primary goal of supervision.

As a supervision process, the DATA program is designed to provide a vehicle for the improvement of instruction. Systems designed primarily to evaluate, unless the evaluation is limited to self-evaluation, have been all too typical of supervision in education past. Our proposal emphasizes teacher-supervisor interaction in order to more effectively and efficiently achieve pre-determined educational objectives. The evaluation of this program is only a spin-out of the DATA program and is secondary to the primary purpose.

Program Phases

DATA can be sequentially divided into four major phases. A brief description of each phase is given in the following material.

Phase I: Observation and Recording.

During this phase, the classroom behavior of both teacher and students is observed and recorded. The recorder, whether supervisor, administrator, or fellow teacher, produces a record of the verbal and physical behavior occurring in the classroom. With training, increasing amounts of behavior can be thus recorded, although with pre-planning, only certain parts of the total act may receive attention. The purpose here is to reduce to a written record as much of the teaching-learning act as is possible, leaving the analysis of this record for later.

Phase II: Reconstruction and Dissection.

In order for the teacher and the observer to systematically analyze the behavior that has occurred, they must first come to an agreement about the content of the classroom encounter. The reconstruction of the lesson attempts to accomplishment this requirement through synthesis. Pertinent sections of the teaching act are verbally recalled by the teacher, while the observer adds forgotten data from the record. In this manner, the resulting re-synthesized lesson will more nearly represent the teaching behavior that actually occurred, rather than either the observer's or teacher's opinion of the encounter.

The dissection involves the identification of regularly occuring "patterns" in the teaching act. Patterns are verbal or physical behavioral habits used by the teacher, (teacher patterns), or the students, (student patterns). They may be positive, negative, or neutral patterns, i.e., they may support or inhibit the purposes of the lesson or have no apparent effect on the lesson. Prior to the determination of value, however, the patterns must be defined and supported by evidence from the written, reconstructed lesson. The following page is a form used to summarize those verbal or physical patterns of either the student or the teacher which can be supported by the gathered data. Note that other information included on this summary sheet are the names, dates, times, comments or suggestions discussed and the instructional objectives.

Phase III: Pattern Assessment and Planning.

Only at this point is there a conscious, subjective assessment of the observed behavior. Now the teacher and student patterns are evaluated in terms of the purposes of the lesson. These purposes, or instructional objectives can be internally assessed as to validity, appropriateness, or consistency, while the effectiveness of the patterns can only be evaluated by references to these objectives, or to relevant research in learning or educational theroy. The significant point is that the patterns have no inherent value, but only take on value as they are matched with the teaching purposes.

The next phase of the process is change through cooperative planning. The teacher and the observer together plan potentially more effective teaching behavior, focusing upon the pattern (or patterns) which are agreed to be most critical in the achievement of the desired objectives. When the plans have been developed, the observer and teacher agree upon the necessary evidence to be gathered in the next observation, and the process is recycled.

Phase IV: Teaching Evaluation.

The data gathered during the classroom visitation is basic to the final assessment of teaching in the teaching act. It is important that throughout the several phases of the DATA program the emphasis is on the observed behavior patterns of the teacher and the students. Value judgments have been limited to the decision of whether the defined behavior patterns support the instructional objectives.

System of evaluation. In the evaluation phase, the teacher and the observer are concerned with how often the behavior patterns exhibited by the teacher and the students support instructional purposes. In other words, the concern is with frequency and not with relative value. An evaluation instrument is needed which is consistent with the DATA program. Guidelines for the development of such an instrument are as follows:

1. The specific and important teaching behaviors must be identified by the teaching faculty.
    a. These behaviors must then be categorized into those for which objective data can be obtained and those for which a subjective statement may be developed.
2. The administrator's role is to provide procedural guidance in the development of the evaluation instrument.
    a. The legal aspects, including policy and legislated limitations, are specific areas where the administrator should provide guidance.
3. The elements of the evaluation instrument should include the following:
    a. Those factors which can be supported by objective data and placed on a frequency continue.

   b. Those specific teacher and supervisor responsibilities associated with the teaching behaviros included.

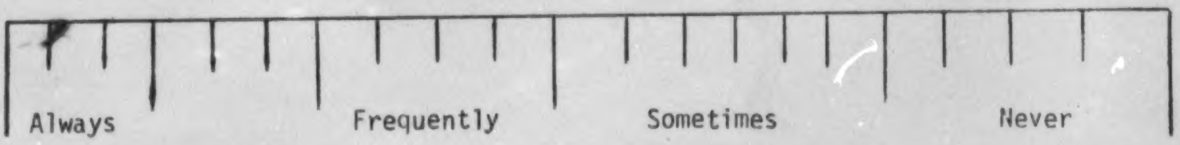
   c. Those factors which are supported only by subjective statements.

4. The evaluation instrument (if to be used for the improvement of instruction) must be distributed to all teachers prior to the beginning of the school year.

5. The formal evaluation conference will make use of the observation records and the data supplied by the teacher.

The guidelines suggest that a band or continum be used for recording the frequency of the behavior patterns that have been observed. It is expected that the observer and the teacher using the recorded evidence would be generally in agreement about how often the patterns have occurred. Because the frequency is expressed on a continum putting a check on a finite point is not critical. A band describing the difference between the observer's judgment and the teacher's judgment of frequency might be appropriate and valuable. However, it must be emphasized that the check is an approximation based on the data extrapolated from the observation material.

If the observer puts a check mark on the band the teacher uses some other mark such as an X, the discrepancy between the two is easy to identify. For example:



The use of a band on the continum helps to reduce the subjective error and at the same time allow for a meeting of the minds between the teacher and the observer. If there is a wide discrepancy between the observer and the teacher it may be necessary to spend a good deal more time in observing and assessing this teacher's work in order to reduce the discrepancy.

Areas of evaluation.

The guidelines for the development of an evaluation instrument point out that the important teaching behaviors for any particular level, area, school or district must be identified by the teaching faculty. Several hundred educators have, while using the DATA program, identified aspects of the teaching act which they feel to be most important. An evaluation instrument has been developed which incorporates the thinking of these teachers and administrators.

The responsibilities of teacher and supervisor (observer) are given with each category. It is possible to gather some objective data about the first seven categories. The remaining areas to be considered lend themselves to subjective assessment. It must be emphasized that the categories or areas to be assessed are simply examples. Each school faculty should come to an agreement about which aspects of the teaching act are most important to them and which need to be assessed.

Sample Evaluation Instrument

I. Instructional Objectives

A. The instructional objectives are stated in reference to the characteristics and needs of the class.

Always	Frequently	Sometimes	Never

Teacher responsibility

Prepare written objectives which are necessary for teaching the class.

Supervisor responsibility

Identify and discuss objectives in post-observation conference.

II. Teacher-Student Interaction

A. Classroom operations include the opportunity for students to interact with each other and with the teacher.

Always	Frequently	Sometimes	Never

Supervisor Responsibility

To record data regarding the content discussed or used and present to the teacher for the post-observation conference.

VI. Management and Control of Students

A. The students' behavior is supportive of the instructional objective.

Always | Frequently | Sometimes | Never

Teacher responsibility

Provide data regarding the development and use of pre-determined management procedures.

Supervisor responsibility

Observe and record behavior of students in the classroom and to discuss the observation with the teacher.

VII. Instruction Methodology

A. The teacher implements instructional methods which support the attainment of his objectives.

Always | Frequently | Sometimes | Never

Teacher responsibility

Develop a plan which describes the variety of instructional methods used to attain the instructional objectives.

Supervisor responsibility

Observe and record the instructional methods used.

VIII. Other Possible Areas to be Considered

A. The items listed below are suggested as important teaching variables but for which objective evidence is very difficult to obtain. Therefore, subjective statements may be developed and included in the evaluation instrument if considered vital by district teachers and administrators.

1. The personal qualities of the teacher.

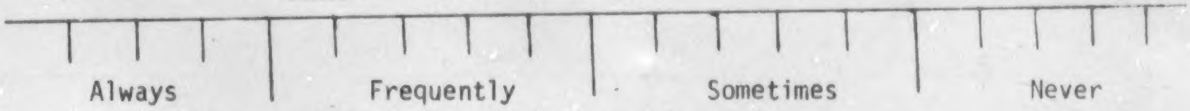
2. The enthusiasm of the teacher.

3. The amount or type of rapport between the teacher and the students.

4. The total environment of the classroom.

In addition to the classroom observatons the school district may very likely want to include other areas in the evaluation instrument. It is strongly recommended that once these areas are identified they are treated in the same manner as those described in the DATA program. Evidence or data should be gathered and then assessed in terms of frequency and not in terms of relative value. For example, a district may be concerned about the teacher-community relationships. If this is an area for assessment, the teacher could sumbit (prior to the formal evaluation meeting) a summary of his activities which support the school in the community. The administrator could, with teacher approval, add to the summary as submitted or develop a separate statement if he had to question items presented by the teacher. In either case, the two parties should be able to reach some general agreement about the frequency of supportive behavior in this area. This could be represented on the evaluation instrument in the following manner:

Teacher-Community Relationships
The teacher takes part in community activities which help to strengthen
the position of the school in the community.



Each school district should decide about the kinds of out-of-class areas which they wish to include in the total evaluation instrument. All of the selected areas should be viewed in terms of the frequency of the behavior patterns as they pertain to each area. An area should be checked only when there is written data to support the placement of the mark on the continuum.

The system of teaching evaluation within the DATA program is based upon evidence generated by the observations and records. While several suggestions have been offered, the final structure is an intra-district responsibility. Assumptions about the evaluation of teaching as reflected in the DATA program include:

1. An effective program of teaching evaluation extends from recruitment to retirement.

2. The role of the teacher in the educational institution is complex and multi-dimensional.

3. The teaching encounter in the classroom is a primary element in the overall role of the teacher.

4. Techniques of teaching evaluation must encourage diversity in teaching behavior.

5. Summarized multiple observations of behavior tend toward greater reliability of actual behavior.

6. Records of actual behavior are basic data, and support the summaries of observations.

7. Techniques by which the effectiveness of teaching behavior is assessed must be adapted to the characteristics, needs, and organizational structure of an individual district.

8. The occurring frequency of patterns which are defined and delimited by teacher and administrator groups as most pertinent, provide a more objective evaluation of effectiveness.

If cumulative teaching strengths and weaknesses are identified by a district, and action is taken to change and improve its educational program, the DATA program will have achieved its purposes.

PATTERN SUMMARY SHEET

DATA PROGRAM

Instructional Objectives: ______________________________

____

____

Teacher ______________________________

Date ______________________________

Time ______________ to ______________

Observation No. ______________________________

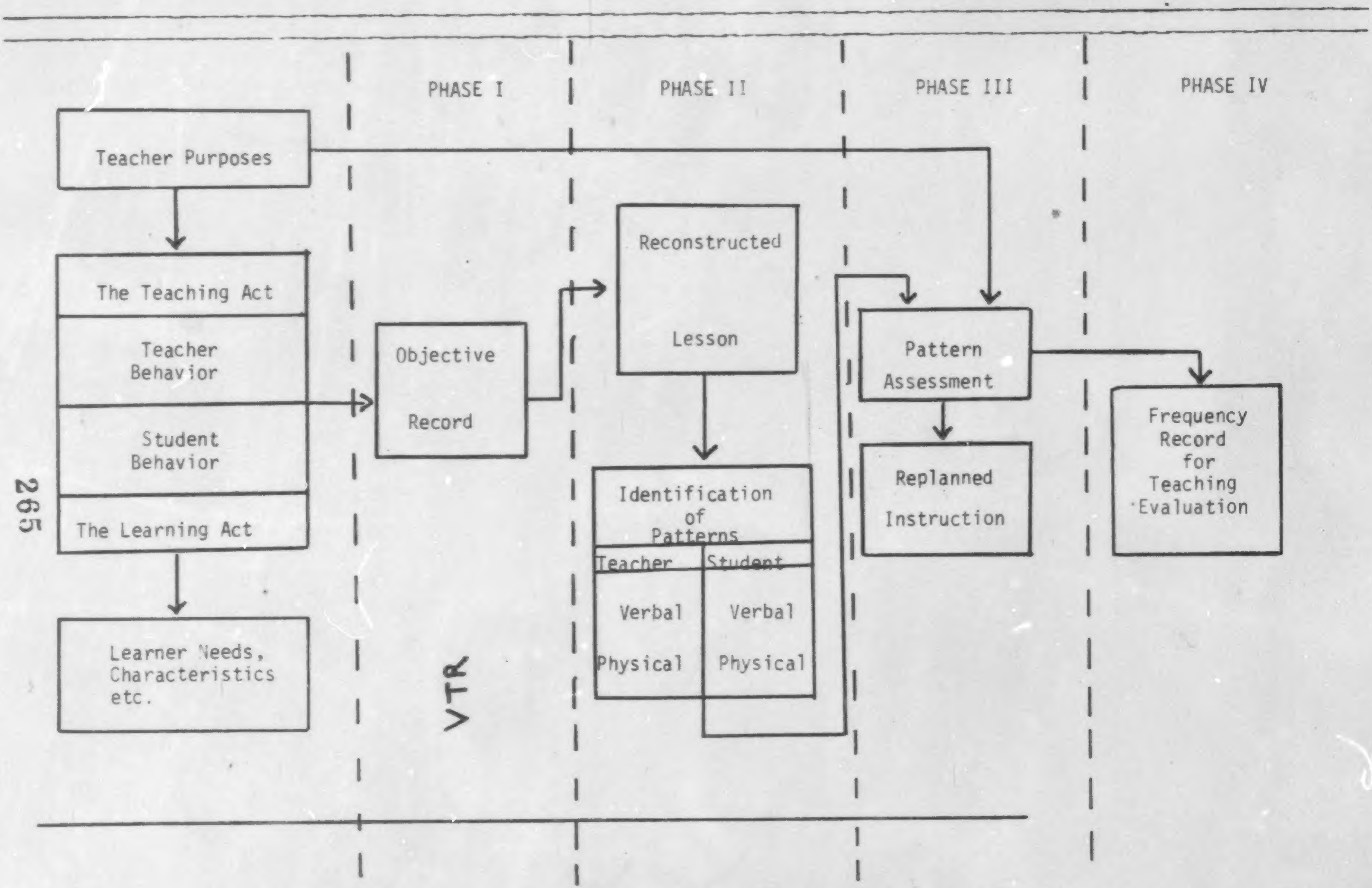
- Patterns -

Teacher		Student
	Verbal	
	Physical	

- Comments -

Teacher's Signature ______________________________

SCHEME OF THE DATA PROGRAM


PHASE I
PHASE II
PHASE III
PHASE IV
Teacher Purposes
The Teaching Act
Teacher Behavior
Student Behavior
The Learning Act
Learner Needs, Characteristics etc.
Objective Record
VTR
Reconstructed Lesson
Identification of Patterns
Teacher
Student
Verbal
Physical
Verbal
Physical
Pattern Assessment
Replanned Instruction
Frequency Record for Teaching Evaluation

"P. A. R. - TEACHER PERFORMANCE ASSESSMENT R

Teacher:________________________________ Date:_

Evaluator:______________________________

Appraisal by others and/or by one's self can be a satisfying and pro and the evaluator. It is nothing to fear or avoid but should be a good e seen in the proper light. To see one's self as he is requires genuine ho attitudes.

A big step toward improvement and growth through appraisal is accept interests and recognizing these areas of strength. It is just as importa limitations in a good self-appraisal and to seek help in overcoming these

A teacher, as a professional person, should be willing to accept the instructor. Good qualities must be strengthened; limitations must be ove good teacher must be studied carefully, and after a plan is decided upon, TEACHER PERFORMANCE ASSESSMENT RATING"

Date:______________________________

self can be a satisfying and profitable experience for both the teacher
or avoid but should be a good evaluation where all characteristics are
elf as he is requires genuine honesty and generally good wholesome

owth through appraisal is accepting one's various talents, abilities,
strength. It is just as important to be able to identify one's own
to seek help in overcoming these limitations.

should be willing to accept the challenge of improving as a classroom
gthened; limitations must be overcome. One's problems in becoming a
nd after a plan is decided upon, followed resolutely.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the contributions of Dr. Gordon M
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instrument.

Also, we would like to thank Dr. Phil George and Dr. Alvie Shaw of E
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Special thanks goes to those individuals and groups who have shared
field.

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il George and Dr. Alvie Shaw of Eastern Washington State College for

sell, District Superintendent of Schools, Castlegar, for his encourage-
use of the instrument.

appreciation to the teachers of the Kinnaird Junior Secondary School,
n Rivers Elementary School of the Castlegar School District in British
tion and participation in the field testing of this instrument.

duals and groups who have shared with us their ideas in the evaluative

The teacher must evaluate himself and his students if instruction is
be evaluated in light of established goals.

In order to evaluate the instruction and the effectiveness of a teac
to measure those activities that directly involve the teacher with the pu

This instrument focuses attention on certain attributes of good teac
ment is to improve performance. It is intended to be used both by the te
authors have, under strategies, attempted to include as many points of go
strategies, such as divergent, convergent, cognitive, inquiry, discussion
the over-all assessment under strategies. It is fully realized that impr
as the instrument is experimented with by teachers and evaluators.

The following steps are suggested for optimum results when this inst
teacher and evaluator or evaluators.

1. All teachers must be made aware of the over-all purpose of evalu
the terms used in this assessment. These will be discussed in t
which time the framework will be established.

2. Certain areas may not be applicable to every teaching situation
the completion of this instrument must be made only after a leng
least two weeks of observation by the evaluator). The teacher s
ment basing his responses on his actual performance as he honest

3. The teacher and the evaluator must agree to discuss and compare
view to planning and improving those areas involving more than t

4. The evaluator (principal) will follow-up the assessment during t
evaluate the areas selected for improvement by the teacher and e

and his students if instruction is to improve. The student should
oals.

ion and the effectiveness of a teacher, this instrument will be used
tly involve the teacher with the pupils.

on certain attributes of good teaching. The purpose of this instru-
intended to be used both by the teacher and the evaluator. The
ted to include as many points of good teaching as possible. The basic
ent, cognitive, inquiry, discussion, groups, etc., are represented in
es. It is fully realized that improvements will be made in the future
by teachers and evaluators.

for optimum results when this instrument of evaluation is used by

re of the over-all purpose of evaluation and made familiar with
ment. These will be discussed in the pre-planning sessions at
be established.

icable to every teaching situation at all times and therefore
ment must be made only after a lengthy observation time (at
n by the evaluator). The teacher should complete the assess-
his actual performance as he honestly views it.

must agree to discuss and compare both appraisals with a
g those areas involving more than the minimum rating of 4.

l follow-up the assessment during the following months to
or improvement by the teacher and evaluator (principal).

5. The teacher should refer to this appraisal instrument frequently
   guidance either from a resource person capable of such, through
   with colleagues and principal.

6. The teacher must realize that the evaluator (principal as a rule)
   reference and the teacher retains his copy - both should be sign
   the evaluator.

Teachers should feel free to suggest improvements in the procedure o
It is the intent of the authors that these will be reviewed at the end of
made where necessary and desirable.

s appraisal instrument frequently during the year and seek
person capable of such, through reading or discussion

he evaluator (principal as a rule) retains his copy for
ns his copy - both should be signed by the teacher and

t improvements in the procedure of use or of the instrument itself.
se will be reviewed at the end of a one-year trial and adjustments

(a) Behavioral Objectives:

These objectives should be clearly defined so as to provide a concrete guide in the selecti and planning of learning experiences. Behavioral Objectives must be defined in order to mak an evaluation since unless there is some clear conception of the sort of behavior implied b the objectives, one has no way of telling what kind of behavior to look for in the students in order to see to what degree these objectives are being realized. The situations which w give the student the chance to express the behavior that is implied by the educational obje tives must be identified.

(b) Instructional Objectives:

The purpose of instructional objectives is to make clear to teachers, students, and other interested persons what it is that needs to be taught - or what it is that has been taught. A well-written instructional objective should say three things: (1) what it is that a stude who has mastered the objective will be able to do; (2) under what conditions he will be able to do it; and (3) to what extent he will be able to do it. In summary: performance - conditions - extent. (From Strategies and Tactics in Secondary Education, Leonard H. Clarke.)

INDICATIONS OF QUALITY INSTRUCTION

I. INSTRUCTIONAL OBJECTIVES	1	2	3
(a) Behavioral Objectives for each subject area of instructional responsibility have been formulated.	Both long- and short-range objectives have been written illustrating criterion performance, sample term tests items, and instructional procedures		Short-rang week, or m
(b) Instructional Objectives are clearly defined.	Objectives are written in terms of observable student behavior illustrating criterion performance.		Objectives of behavio not in ter
(c) Students are aware of objectives or goals.	Evidence of goals to be aimed for is clearly provided - in writing, or carefully worded verbally.		Goals and ed verball question, too ready
(d) Materials and Activities	Are relevant for objectives in mind and for type of students involved.		Are relevan not to stu
(e) Instructional Objectives illustrate student behavior in the domains and on various levels.	Student behavior in several domains and on various levels is illustrated in the objectives.		Student beh one domain ing is ill tives.

5

NDICATIONS OF QUALITY INSTRUCTION

2	3	4	5	6	7
hort-range objec- written illustrating mance, sample term d instructional pro-		Short-range objectives (day week, or month) have been written.		No behavioral objectives have been formulated.	
2	3	4	5	6	7
ritten in terms tudent behavior terion perfor-		Objectives are written in terms of behavior but activities are not in terms of learner.		Objectives are general, vague and not defined in terms of behavior.	
2	3	4	5	6	7
s to be aimed provided - in fully worded		Goals and objectives are explained verbally only - students question, doubt, and don't appear too ready to work.		No specific effort is made to have students know what the goals and objectives are.	
2	3	4	5	6	7
objectives in e of students		Are relevant to objectives but not to students.		No relevancy between objectives, materials, and activities for majority of students.	
2	3	4	5	6	7
in several arious levels n the objec-		Student behavior in more than one domain and level of learning is illustrated in the objectives.		Opportunities missed for setting student behavior in more than one domain or on more than one level.	

INDICATIONS OF QUALITY INSTRUCTION

		1	2	3
(f)	Instructional Objectives illustrate student behavior in the cognitive domain.	Objectives are written in terms of observable student behavior at the evaluative level, encompassing all previous levels of the cognitive domain hierarchy with their sub-categories.		Objectives of observa at the app passing al the cognit sub-catego
		1	2	3
(g)	Instructional Objectives illustrate student behavior in the affective domain.	Objectives are written in terms of observable student behavior at the organization level, encompassing all previous levels of the affective domain with all its sub-categories.		Objectives of observa at the res passing al the affect its sub-ca
		1	2	3
(h)	Instructional Objectives illustrate student behavior in the psychomotor domain.	Objectives are written in terms of observable student behavior including a complex of simultaneous skills at varied degrees of difficulty.		Objectives of observa including at varied

6

DICATIONS OF QUALITY INSTRUCTION

2	3	4	5	6	7
ritten in terms udent behavior e level, encom ious levels of main hierarchy ategories.		Objectives are written in terms of observable student behavior at the application level encompassing all previous levels of the cognitive domain with their sub categories		Objectives are written in terms of observable student behavior at the knowledge level with all its sub categories	
2	3	4	5	6	7
ritten in terms udent behavior ion level, encom- ious levels of main with all es.		Objectives are written in terms of observable student behavior at the responding level, encompassing all previous levels of the affective domain with all its sub categories.		Objectives are written in terms of observable student behavior at the receiving level with all its sub categories	
2	3	4	5	6	7
ritten in terms udent behavior lex of simulta- varied degrees		Objectives are written in terms of observable student behavior including more than two skills at varied degrees of difficulty.		Objectives are written in terms of observable student behavior including only one skills.	

Explanations

(b) Facilitation is used here. This is an opening strategy in order to
direction.

Higher levels - refers to cognitive domain from comprehension to eva
(recall) only.

(d) Facilitation is used here in order to have students explore within t
objectives.

6b

an opening strategy in order to stimulate the student toward self-

domain from comprehension to evaluative. Lower refers to memory

to have students explore within the realm of the teacher-established

INDICATIONS OF QUALITY INSTRUCTION

II. STRATEGIES

		1	2	3
(a)	Teaching Strategies	Strategy planned is appropriate and practical in view of objectives and students involved		Strategy n to objecti volved.
(b)	The teacher asks a variety of questions that encourage wide possibilities of thought and that are built around varying levels of the cognitive domain	Asks questions stimulating response from higher levels of the cognitive domain		Asks questi sponses fro of the cog
(c)	The teacher presents information by asking questions that are built upon pupil responses to previous questions and by interjecting new information in the course of the discussion.	All information presented is based upon pupil's responses to previous questions.		Half of the sented afte to question
(d)	The teacher guides questioning toward objectives of the lesson.	Questioning is guided and purposeful. Students are encouraged to think and explore		Questioning are not all

7

CATIONS OF QUALITY INSTRUCTION

2	3	4	5	6	7
s appropriate and of objectives and		Strategy not completely relative to objectives and students involved.		Strategy not appropriate.	
2	3	4	5	6	7
mulating re levels of the		Asks questions eliciting responses from more than one level of the cognitive domain.		Asks narrow questions eliciting responses from only one level of the cognitive domain memory.	
2	3	4	5	6	7
esented is based nses to previous		Half of the information is presented after student responses to questions.		No information is presented based on student responses to questions.	
2	3	4	5	6	7
ded and pur- are encour- explore.		Questioning is guided, but students are not allowed to explore.		Questioning is unguided and random.	

Explanations

(e) Students are encouraged to elaborate their ideas opening the discuss
cognitive domain. Awareness with facilitation moves on the teacher'
search the problem in a question further. Opening moves on the teac

(f) Empathy is exhibited in this strategy. The affective domain is invo

(g) Definitions

convergent thinking - defined as leading to a right answer or to a r
answer. This type of thinking usually deals w
simulating and analyzing data.

(ii) divergent thinking - defined as unlimited solutions to problem
intellect model identifies five areas:

1. Fluency - the "ready flow of ideas"
2. Flexibility - readiness to change dir
3. Originality - production of responses
"remotely related", and
4. Sensitivity - awareness of problems a
situations.
5. Elaboration - expanding upon ideas by

(iii) evaluative thinking - student makes a judgment of good or bad,
standards, information, analysis, select
appropriate to problem.

e their ideas opening the discussion toward a higher level of the
acilitation moves on the teacher's part would help the student
rther. Opening moves on the teacher's part.

gy. The affective domain is involved.

ading to a right answer or to a recognized best or conventional
type of thinking usually deals with gathering, selecting, as-
d analyzing data.

as unlimited solutions to problem. Guilford's structure-of-
t model identifies five areas:

ncy - the "ready flow of ideas"
ibility - readiness to change direction or to modify information.
inality - production of responses that are "statistically rare", "remotely related", and/or "clever"
itivity - awareness of problems and ability to adapt quickly to new situations.
oration - expanding upon ideas by filling them out with detail

makes a judgment of good or bad, right or wrong according to his
ls, information, analysis, selections, etc., of data he feels
iate to problem.

INDICATIONS OF QUALITY INSTRUCTION

		1	2	3
(e)	Elicited student responses and teacher questioning.	Student questioning is sampling and very helpful in guiding the pupils toward goals. All students are involved and encouraged to contribute to responses.		Student qu in samplin
		1	2	3
(f)	Teacher acceptance of student responses.	Pupil's ideas are treated as having value, unusual questions and diverse contributions are recognized and accepted and praised - encouragement is given to pupils to pursue and explore further.		Pupil's di ideas are as if ther sider them evident va very littl to pupils
		1	2	3
(g)	Teacher acceptance of student attacks on problems in convergent, divergent, and evaluative approach.	Students are encouraged to pursue any attack on any problem.		Students a particular suggested
		1	2	3
(h)	A variety of assignments is made to individuals and to small groups.	Assignments are made to individuals and small groups relative to goals set.		Identical to all of sionally.
		1	2	3
(i)	Pupil participation is active, challenging, and purposeful to each individual.	All pupils participate actively with purposes that challenge their different abilities.		Pupils par purposes t

8

NDICATIONS OF QUALITY INSTRUCTION

2	3	4	5	6	7
ning is sampling l in guiding the oals. All students d encouraged to esponses.		Student questioning is limited in sampling.		Student responses are in no way encouraged and the teacher answers the student only to get on with the topic.	
2	3	4	5	6	7
re treated as having questions and diverse re recognized and aised - encourage- o pupils to pursue ther.		Pupil's diverse contributions, ideas are passed over quickly as if there is no time to consider them because there is no evident value to the teacher - very little encouragement given to pupils to explore further.		No recognition given to diverse ideas, contributions, in fact ideas are put down as being irrelevant to topic - no encouragement to pursue ideas further.	
2	3	4	5	6	7
couraged to pursue ny problem.		Students are encouraged to use a particular line of attack as suggested by the teacher.		Students are not given the freedom of method in attacking problem.	
2	3	4	5	6	7
made to individuals s relative to goals.		Identical assignments are given to all of the class only occasionally.		All pupils are given identical assignments most of the time.	
2	3	4	5	6	7
icipate actively hat challenge their ties.		Pupils participate actively with purposes that challenge most.		Pupils participate passively with purposes that challenge only a few.	

INDICATIONS OF QUALITY INSTRUCTION

		1	2	3
(j)	Teacher encourages pupils to build on other pupils' ideas by practicing reflection, and summarizing before interjecting their own ideas.	Pupils build on each other's statements, reflect and summarize statements, and add personal feelings.		Pupils mak statements comment.
		1	2	3
(k)	Teacher encourages student dialogue.	All students talk to each other, question each other, comment on statements, summarize ideas, reflect ideas and feelings.		Half the s marize, re ings.
		1	2	3
(l)	Students work independently in intra-class grouping.	Students work in small groups with little direction for prolonged periods of time.		Students w small grou of time.
		1	2	3
(m)	Students are involved in planning learning activities based on the content objectives.	All pupils are actively involved in short and long range planning.		Students a volved in planning.
		1	2	3
(n)	Organization of activities and materials is suitable for the objectives in mind and the type of student involved.	All of the activities and materials facilitate learning in the direction of the objectives.		Half of th materials objectives

NDICATIONS OF QUALITY INSTRUCTION

2	3	4	5	6	7
each other's state- and summarize state- personal feelings.		Pupils make brief summaries of statements without personal comment.		Discussion is limited to responses given directly to the teacher.	
2	3	4	5	6	7
lk to each other, ther, comment on narize ideas, re feelings.		Half the students question, summarize, reflect ideas and feelings.		Student teacher dialogue only.	
2	3	4	5	6	7
small groups ction for pro- of time.		Students work independently in small groups for short periods of time.		Students work in small or large groups under the direction of the teacher at all times.	
2	3	4	5	6	7
ctively involved g range planning.		Students are occasionally involved in short and long range planning.		Students are permitted little or no opportunity to plan activities.	
2	3	4	5	6	7
ities and materials ing in the direction s.		Half of the activities and the materials are suitable for the objectives and the individual.		None of the activities are suitable for the objectives or type of learner involved.	

Explanations

(o) The creative opportunity is one that promotes the growth of the auto sufficient and independent in judgment.

(p) Group Activity:

- Seating facilitates interaction.
- Objectives and purposes of the teacher are to cultivate and facili idea exchange and shared problem solving.
- The group shares in decision-making.
- There is pupil-pupil communication as well as teacher-pupil commun
- The group itself resolves any conflicts.
- Pupils share the leadership role with the teacher.
- Group goals are set and agreed upon by all members of the group.
- Evaluation of group attainments is a function of the group rather
- The teacher's role is that of a member of the group rather than a

Five divisions of group growth should be utilized in order to attain are: (1) membership; (2) influence; (3) feelings; (4) individual di as outlined in "Jung's Research Utilizing Problem Solving Process",

The seminar system should be the format of the group.

9b

romotes the growth of the autonomous learner - one who is self-
t.

er are to cultivate and facilitate social skills, cooperation,
lving.

s well as teacher-pupil communication.
cts.
h the teacher.
by all members of the group.
function of the group rather than the prerogative of the teacher.
er of the group rather than a director or superior.

be utilized in order to attain success in this strategy. These
3) feelings; (4) individual differences; and (5) productivity,
ing Problem Solving Process", page 16.

t of the group.

INDICATIONS OF QUALITY INSTRUCTION

		1	2	3
(o)	Creative opportunity and planning are part of the program.	Time and opportunity is allowed to think and discover, play with ideas, manipulate objects, experiment without pressure to get "the answer" or to get it "right".		Opportunity vided to d ideas, man ment witho answer" or
(p)	Teacher permits opportunity for students or groups of students to alter activities	Teacher and students respect the opinions of each other and agreements are reached with no conflict and hostility on the part of either.		Teacher and alterations conflict a unresolved
(q)	Pupils are encouraged to share and discuss ideas by breaking into small groups and talking.	All children have an opportunity to talk to each other, question each other, comment upon statements of individuals in the group		A few pupi to particip based on th interests
(r)	When small groups report back to a large group the teacher accepts and summarizes pupils' talk and helps pupils clarify their contributions.	All students have an opportunity to experience small group and large group participation with the teacher facilitating concept development.		Students e large group the teacher development

CATIONS OF QUALITY INSTRUCTION

2	3	4	5	6	7
ty is allowed to , play with ideas, , experiment with t "the answer" or		Opportunity is occasionally provided to discover, play with ideas, manipulate objects, experiment without pressure to get "the answer" or to get it "right".		No opportunity is provided (or very seldom) to discover, play with ideas, manipulate objects, experiment without pressure to get "the right answer" or to get it "right"	
2	3	4	5	6	7
ts respect the ther and agree with no conflict he part of either		Teacher and students discuss alterations of activities but conflict and disagreement are unresolved - teacher dominates.		Teacher and students do not discuss any alterations of activities as suggested by the original plan.	
2	3	4	5	6	7
an opportunity her, question t upon state- ls in the group		A few pupils have an opportunity to participate in discussion based on their experiences and interests.		No children participate in spontaneous discussion.	
2	3	4	5	6	7
an opportunity l group and ipation with tating concept		Students experience small and large group participation with the teacher facilitating concept development.		No students experience small and large group participation.	

INDICATIONS OF QUALITY INSTRUCTION

		1	2	3
(s)	Variety of reference material available when practical.	A wide variety of teacher-made and professional materials such as filmstrips, films, work sheets, games, magazines, newspapers, transparencies, charts, library materials, supplementary texts, dictionaries, atlases, encyclopedias, and other aids are available and made use of whenever the opportunity presents itself.		Reference the texts but only

II

ICATIONS OF QUALITY INSTRUCTION

2	3	4	5	6	7
teacher-made and rials such as film- rk sheets, games, pers, transparen- rary materials, ts, dictionaries, edias, and other e and made use pportunity pre-		Reference materials other than the texts are used periodically but only in a limited way.		Reference materials other than the text are used sparingly or not at all or without any relevancy at all to objectives.	

III. EVALUATION

		1	2	3
(a)	The teacher evaluates in terms of objectives and revises systems of instruction as a result of the evaluation.	The teacher retains only the worthwhile aspects of instruction and uses reflective thinking to set new objectives.		The teacher of instruct ods, materi goals in li previous go
(b)	Pupils discuss their progress in terms of the objectives set for the lesson, with the teacher in a conference.	All pupils freely discuss progress with the teacher individually where the teacher and learner exchange and accept each other's thought, feelings, and observations.		More than h discuss pro with the te
(c)	The teacher gives children tools and methods for evaluating their own efforts.	All children have an opportunity to discuss achievement in terms of the original objectives set, and to re-define goals in light of their progress.		Children re back that l responses, of goals.
(d)	Students evaluate their own progress in light of clearly defined objectives, and are able to organize their efforts into relevant activities.	Most of the students evaluate their onw progress and are able to organize efforts into relevant activities.		Several stu own progres organize ef activities.

ATIONS OF QUALITY INSTRUCTION

3	4	5	6	7
only the worth- truction and king to set	The teacher uses the same aspects of instruction, procedures, methods, materials, but re-defines goals in light of evaluation of previous goals		Systems of instruction are not revised in light of evaluation.	
3	4	5	6	7
scuss progress lividually d learner ex- ch other's nd observa-	More than half of the students discuss progress individually with the teacher.		No pupils discuss progress with the teacher individually.	
3	4	5	6	7
opportunity nt in terms ctives set, ls in light	Children receive corrective feedback that leads to more appropriate responses, but not a re-definition of goals.		Teacher does not involve the children in evaluative procedures.	
3	4	5	6	7
evaluate nd are able to o relevant	Several students evaluate their own progress and are able to organize efforts into relevant activities.		No student evaluates his own progress.	

P. A. R.

Date____________________ Profile Name____________________

I. Instructional Objectives:

a.	1	2	3	4	5	6	7
b.	1	2	3	4	5	6	7
c.	1	2	3	4	5	6	7
d.	1	2	3	4	5	6	7
e.	1	2	3	4	5	6	7
f.	1	2	3	4	5	6	7
g.	1	2	3	4	5	6	7
h.	1	2	3	4	5	6	7

II. Strategies:

a.	1	2	3	4	5	6	7
b.	1	2	3	4	5	6	7
c.	1	2	3	4	5	6	7
d.	1	2	3	4	5	6	7
e.	1	2	3	4	5	6	7
f.	1	2	3	4	5	6	7
g.	1	2	3	4	5	6	7
h.	1	2	3	4	5	6	7
i.	1	2	3	4	5	6	7
j.	1	2	3	4	5	6	7
k.	1	2	3	4	5	6	7
l.	1	2	3	4	5	6	7
m.	1	2	3	4	5	6	7
n.	1	2	3	4	5	6	7
o.	1	2	3	4	5	6	7
p.	1	2	3	4	5	6	7
q.	1	2	3	4	5	6	7
r.	1	2	3	4	5	6	7
s.	1	2	3	4	5	6	7

III. Evaluation:

a.	1	2	3	4	5	6	7
b.	1	2	3	4	5	6	7
c.	1	2	3	4	5	6	7
d.	1	2	3	4	5	6	7

h.	1	2	3	4	5	6	7
i.	1	2	3	4	5	6	7
j.	1	2	3	4	5	6	7
k.	1	2	3	4	5	6	7
l.	1	2	3	4	5	6	7
m.	1	2	3	4	5	6	7
n.	1	2	3	4	5	6	7
o.	1	2	3	4	5	6	7
p.	1	2	3	4	5	6	7
q.	1	2	3	4	5	6	7
r.	1	2	3	4	5	6	7
s.	1	2	3	4	5	6	7

III. Evaluation:

a.	1	2	3	4	5	6	7
b.	1	2	3	4	5	6	7
c.	1	2	3	4	5	6	7
d.	1	2	3	4	5	6	7

Evaluator:______________________________

OBSERVATION MODEL FOR ASSESSING AFFECTIVE BEHAVIOR

Type of Affective Behavior	Type * Check "V" or "N"	Teacher Action	Student Response	Student Response
1. Encouragement				
2. Peer Support Statement				
3. Positive Reinforcement of Self Evaluation				
4. Acceptance				
5. Disapproving of Pupil Behavior				
6. Congruity Between Verbal Intent & Non-Verbal Referents				
7. Response to Feedback				
8. Negative Affectivity				
9. Attentive and Listens to Others				
10. Unreceptive to Others				

*"V" would indicate a verbal type of behavior. "N" indicates a non-verbal behavior such as a frown, smile, sigh, touching, eye contact, or body position.